XR-6503

SERVICE MANUAL

East European Model

Model Name Using Similar Mechanism	XR-C223
Tape Transport Mechanism Type	MG-50EX2-39

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.08 % (WRMS)
Frequency response	30 – 18,000 Hz
Signal-to- noise ratio	

Cassette type	Dolby NR off	Dolby B NR
TYPE II, IV	61 dB	67 dB
TYPE I	58 dB	64 dB

Tuner section

FM

Tuning range	65.0 – 74.0 MHz 87.5 – 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

MW/LW

Tuning range	MW: 531 – 1,602 kHz LW: 153 – 281 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	MW: 30 µV LW: 50 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	25 W × 4 (at 4 ohms)

General

Output lead	Power antenna relay control lead/Power amplifier control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 × 58 × 176 mm (w/h/d)
Mounting dimension	Approx. 182 × 53 × 155 mm (w/h/d)
Mass	Approx. 1.2 kg
Supplied accessories	Rotary Remote RM-X2S (1) Parts for installation and connections (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

FM/MW/LW CASSETTE CAR STEREO

SONY®

TABLE OF CONTENTS

1. GENERAL

Location of Controls 3
Setting the Clock 3
Cassette Player Operation 4
Radio Reception 4
Other Functions 5
Connections 7

2. DISASSEMBLY

2-1. Sub Panel Assy 9
2-2. Heat Sink 9
2-3. Mechanism Deck Block 10
2-4. Main Board 10
2-5. Key Board 11

3. ASSEMBLY OF MECHANISM DECK

3-1. Installing the Loading Gears 12
3-2. Installing the Reel Bracket 12
3-3. Installing the Mode Lever and Pinch Levers 13
3-4. Installing the Cassette Housing 14
3-5. Installing the Loading Lever 14
3-6. Positioning the Loading Levers 15
3-7. Installing the Gear (Loading F) 15

4. MECHANICAL ADJUSTMENTS 16

5. ELECTRICAL ADJUSTMENTS

Deck Section 16
Tuner Section 17

6. DIAGRAMS

6-1. IC Pin Description 20
6-2. Printed Wiring Boards—Main Section— 22
6-3. Schematic Diagram 25
6-4. Printed Wiring Board—Panel Section— 30

7. EXPLODED VIEWS

7-1. Chassis Section 35
7-2. Front Panel Section 36
7-3. Mechanism Deck Section 37

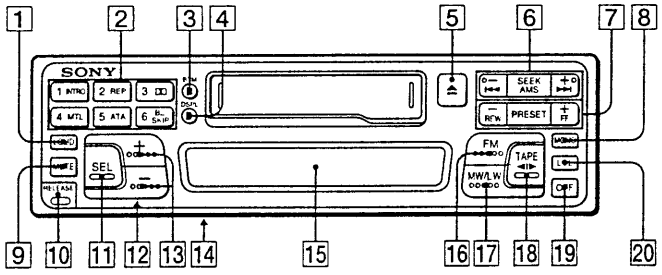
8. ELECTRICAL PARTS LIST 38

Notes on Chip Component Replacement

- Never reuse a disconnected chip component
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ◧◨ are trademarks of Dolby Laboratories Licensing Corporation.

Location of Controls



Refer to the pages in ● for details.

1 LOUD (loudness) button ⑩

2 During radio reception:
Preset number buttons ❽❾

During tape playback:

1 INTRO INTRO button ❼

2 REP REPEAT button ❼

3 DD DD (Dolby B NR) button ❻

4 MTL MTL (Cassette type select) button ❻

5 ATA ATA (Automatic Tuner Activation) button ❼

6 BL SKIP BL.SKIP button ❼

3 BTM (Best Tuning Memory) button ❽

4 DSPL (display mode change/time set) button ❺❻❼

5 ⏏ (eject) button ❻⓫

6 SEEK/AMS button ❻❼

7 PRESET button ❻❼❽❾

8 MONO button ❽

9 MUTE button ⓫

10 RELEASE (front panel release) button ❹⓫

11 SEL (control mode select) button ❺⑩⓫

12 Reset button (located on the front side of the unit hidden by the front panel) ❹
Press this button when you use this unit for the first time, when you have changed the car battery, or when the buttons of this unit do not function properly.

13 (volume/bass/treble/balance/fader control) buttons ❺⑩⓫

14 POWER SELECT switch (located on the bottom of the unit)
See "POWER SELECT Switch" in the Installation/connections manual.

15 Display window

16 FM (radio on/band select) button ❻❼❽❾

17 MW/LW (radio on/band select) button ❻❼❽

18 TAPE/◀II▶ (playback/transport direction change) button ❻

19 OFF button ❹❻❾

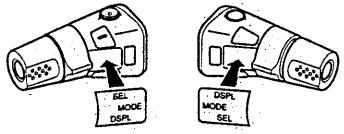
20 LCL (local seek adjust) button ❼

Caution alarm

If you turn the ignition key to the OFF position without removing the front panel, the caution alarm will be activated and a beep tone will be heard for a few seconds (only when the POWER SELECT switch is set to the Ⓐ position).

Preparing the Rotary Remote

When you mount the rotary remote, attach the label in the illustration below.



Turning the Rotary Commander ON/OFF

When the POWER SELECT switch (located on the bottom of the unit) on this unit is set to the Ⓑ position, this unit cannot be operated with the commander unless one of the operational buttons is pressed or a cassette is inserted to activate this unit.

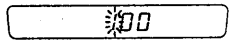
Setting the Clock

The clock has a 24-hour digital indication.

For example, setting it to 10:08

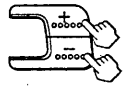
1 Display the time.
(Press the DSPL Ⓓ button during unit operation.)

2 Press the DSPL Ⓓ button for more than two seconds.



The hour digit(s) blinks.

Set the hour digits.



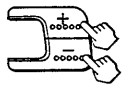
to go forward

to go back

3 Press the SEL button momentarily.

The minute digits blink.

Set the minute digits.



to go forward

to go back

4 Press the DSPL Ⓓ button momentarily.

The clock activates.

Note

If the POWER SELECT switch on the bottom of unit is set to the Ⓑ position, the clock cannot be set unless the power is turned on. Set the clock after you have turned on the radio, or started cassette playback.

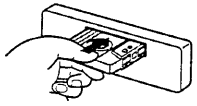
SECTION 1
GENERAL

This section is extracted from instruction manual.

Cassette Player Operation

Listening to Tape Playback

After inserting the cassette, playback will start automatically.



If a cassette is already inserted, press the [TAPE] button to start playback.

If you press this button during playback, the tape transport direction will change.

Indication of Tape Transport Direction

The side facing up is being played.

The side facing down is being played.

To stop playback,
eject the cassette by pressing the [⏏] button or press the OFF button.
Playback also stops when you select the radio by pressing the [FM] or [MW/LW] button.

Changing the Displayed Items

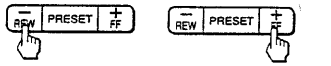
Each time you press the [DISPLAY] button, the displayed items change as follows:

Tape playback → Clock → Frequency (activate the ATA function) →

Ejecting the Cassette

Press the [⏏] button.

Fast-winding the Tape



Rewind — Fast-forward

To start playback while rewinding or fast-forwarding, press the [TAPE] button.

Playing a Tape Recorded in the Dolby B NR System

Press the [3 DOLBY NR] button when you want to listen to a tape recorded in the Dolby B NR system. → "DOLBY NR" appears in the display.
To cancel, press again.

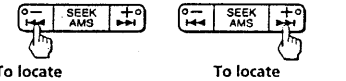
Playing a CrO_2 or Metal Tape

Press the [4 MTL] button when you want to listen to a CrO_2 (TYPE II) or metal (TYPE IV) tape. → "MTL" will appear on the display.
To cancel, press again.

Locating the Beginnings of Tracks

— AMS (Automatic Music Sensor) Function

During playback, press either side of the SEEK/AMS button once for each track you wish to skip.



To locate previous tracks — To locate succeeding tracks

Up to nine tracks can be skipped.

If the blanks between the tracks are shorter than four seconds, or if there are noises, the AMS function will not work properly. Also, the unit may read long sections of low volume music or quiet sections on a track as blanks between tracks.

Searching for the Desired Track — Intro Scan Function

Press the [1 INTRO] button during playback. → "INTRO" appears on the display.
The first 10 seconds of all the tracks are played. When you find the desired track, press the button once more. The unit returns to normal playback mode.

Playing Tracks Repeatedly

— Repeat Play Function

Press the [2 REP] button during playback. → "REP" appears on the display.
When the currently played track is over, it will be played again from the beginning.
To cancel this mode, press the button again.

Radio Reception during Fast-forwarding or Rewinding of a Tape

— ATA (Automatic Tuner Activation) Function

Press the [5 ATA] button during playback. → "ATA" appears on the display.
When fast-forwarding or rewinding with the [REW PRESET FF] button, the tuner will turn on automatically.

Skipping Blanks Automatically during Tape Playback — Blank Skip Function

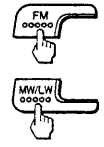
Press the [6 BL SKIP] button during playback. → "BL.SKIP" appears on the display.
Blanks longer than eight seconds will be automatically skipped during tape playback.

Radio Reception

Searching for Stations Automatically

— Automatic Tuning

1 Select the desired band.



FM1 → FM2 → FM3 → FM1 → ···

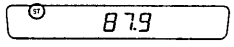
MW ⟷ LW

2 Press either side of the SEEK/AMS button once to search for the next station (automatic tuning).

For lower frequencies — For higher frequencies

The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

When an FM stereo program with sufficient signal strength is tuned in,



The "ST" indication appears.

To keep the automatic tuning from stopping on stations too frequently (local seek mode), press the [LCL] button momentarily to get the "LCL" indication.
Only the stations with relatively strong signals will be tuned in. The local seek mode functions only when automatic tuning is in operation.

Changing the Displayed Items

Each time you press the [DISPLAY] button, the displayed items changes as follows.

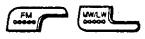
Frequency ⟷ Clock

If FM Stereo Reception is Poor — Monaural Mode

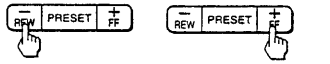
Press the MONO button momentarily.
→ "MONO" appears on the display.
The sound will improve, but it will be monaural.

Tuning in by Adjusting the Frequency — Manual Tuning

1 **Select the desired band.**



2 **Press and hold either side of the PRESET button.**
Release the button when the desired station is received.



For lower frequencies **For higher frequencies**

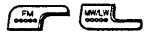
PREVENT ACCIDENTS!
When tuning in while driving, use automatic tuning or the memory preset search function (page 9) instead of manual tuning.

Memorizing Stations Automatically

— BTM (Best Tuning Memory) Function

This function selects from the currently received band the stations with the strongest signals and memorizes them in the order of their band frequency.

1 **Select the desired band.**



2 **Press the BTM (8) button for more than two seconds.**
- When there is no preset number indicated in the display window, stations will be stored on all preset number buttons on the currently selected band.
- When there is a preset number indicated in the display window, the unit will store stations on all preset number buttons from the one currently displayed.

For example, when you select FM2 and preset number 3 is displayed,
the operation will start from preset number 3 on FM2, and will stop at preset number 6 on FM3.

Memorizing Only the Desired Stations

1 **Select the desired band.**

2 **Tune in the station which you wish to store on a preset number button.**

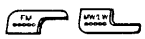
3 **Press and hold the desired preset number button (1 INTRO to 6 SKIP) for about two seconds until you hear a beep tone.**

The number of the pressed preset number button appears on the display window.

Up to 6 stations on each band (FM1, FM2, FM3, MW and LW) can be stored on the preset number buttons in the order of your choice. Therefore, 18 FM stations can be memorized.
If you try to store another station on the same preset number button, the previously stored station will be erased.

Receiving the Memorized Stations

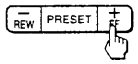
1 **Select the desired band.**



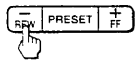
2 **Press momentarily the preset number button (1 INTRO to 6 SKIP) on which the desired station is stored.**

Note
If you press the preset number button for more than two seconds, the currently received station will be memorized. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

Press either side of the PRESET button momentarily to receive other stations stored in the memory (Preset Search Function).



Press momentarily
1 → 2 → ··· → 5 → 6 → 1 → ···



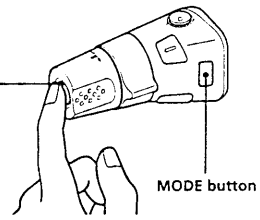
Press momentarily
1 → 6 → 5 → ··· → 2 → 1 → ···

Other Functions

Using the Rotary Remote

The rotary remote works by pressing buttons and/or rotating controls.

By pressing the button (the SOURCE and MODE buttons)



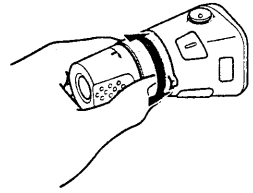
Every time you press SOURCE button, the source changes as follows:

TAPE → FM → MW

Pressing MODE button during operation changes:
- *the tape transport.*
- *the band, FM1 → FM2 → FM3 and MW → LW.*

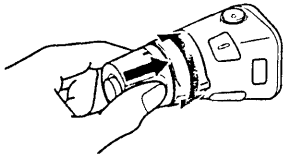
Note
When the POWER SELECT switch is set to position Ⓐ, you can turn on this unit by pressing SOURCE button on the rotary remote.

By rotating the control (the SEEK/AMS control)



Rotate the control momentarily and release it to:
- Rotate and hold the control to locate the specific point in a track, then release it to start playback.
- Tune in the stations automatically. Rotate and hold the control to tune in the specific station.

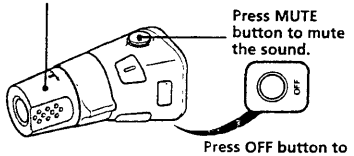
By rotating the control while pushing (the PRESET/DISC control)

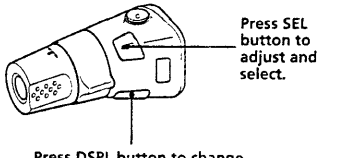


Rotate the control while pushing it to:
Receive the stations memorised on the number buttons.

Other operations

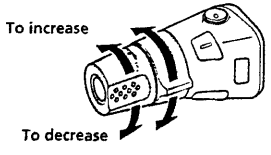
Rotate the VOL control to adjust the volume.



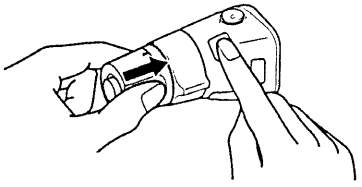


Changing the operative direction

The operative direction of controls is factory preset as in the illustration below.



If you need to mount the rotary remote on the right of the steering column, you can reverse the operative direction of the controls.



Press SEL button for two seconds while pushing the VOL control.

Adjusting the Sound Characteristics

1 Select the item you want to adjust by pressing the SEL button repeatedly.

VOL (volume) → BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume) → ···

2 Adjust the selected item by pressing either the + or − button.

Adjust within three seconds after selecting. (After three seconds the buttons will again serve as volume control buttons.)

Enjoying Bass and Treble at Low Volume

— Loudness Function

Press the LOUD button. → "LOUD" will appear on the display.
The bass and treble will be boosted.
To cancel, press again.

Muting the Sound Quickly

— Mute Function

Press the MUTE button. → The "MUTE" indication flashes.
The sound is muted at once.
To restore the previous volume level, press again.

This function will be also cancelled when:
— the + or OFF button is pressed.
— ejecting a cassette by pressing the ⏏ button during tape playback.

Muting the Beep Tone

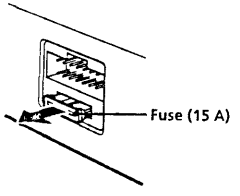
Press the 6 BL SKIP button while pressing the SEL button.

To reactivate the beep tone, press these buttons once more.

Maintenance

Fuse Replacement

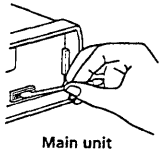
When replacing the fuse, be sure to use one matching the amperage rating stated on the fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.

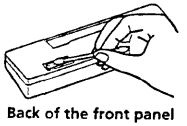


Warning
Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

Cleaning the Connectors

The unit may not function properly if the connectors between the unit and the front panel are not clean. In order to prevent this, open the front panel by pressing the RELEASE button, then detach it and clean the connectors with a cotton swab which was dipped in alcohol. Do not apply too much force. Otherwise, the connectors may be damaged.


Main unit


Back of the front panel

Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common ground point.**

If Your Car has No Accessory Position on the Ignition Key Switch

— POWER SELECT Switch

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear **if your car no accessory position on the ignition key switch.** To avoid this battery wear, **set the POWER SELECT switch located on the bottom of the unit to the ⓫ position, then press the reset button.** The illumination is reset to stay off while the unit is not being played.

Note

The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the ⓫ position.

Reset Button

When the installation and connections are over, be sure to press the reset button with a ballpoint pen etc.

Podłączenia

Uwaga

- Urządzenie to przeznaczone jest do pracy przy uziemieniu ujemnym 12V DC.
- Przed podłączeniem należy odłączyć uziemienie akumulatora samochodowego, aby zapobiec powstaniu zwarcia.
- **Żółty** i **czerwony** wejściowy przewód zasilający połączyć dopiero po podłączeniu wszystkich innych przewodów.
- Czerwony przewód zasilający podłączyć do końcówki o napięciu +12 V, która zasilana jest zawsze po przekręceniu kluczyka w stacyjce do położenia, w którym włącza się zasilanie przyrządów.
- **Wszystkie przewody uziemiające poprowadzić do wspólnego miejsca uziemienia.**

Jeżeli urządzenie ma być wmontowane do samochodu bez specjalnego położenia kluczyka w stacyjce do włączania zasilania przyrządów

— Przełącznik POWER SELECT

Niniejszy odbiornik radiowy ustawia się fabrycznie na automatyczne włączanie oświetlenia przedniej ścianki nawet wtedy, gdy samo radio nie jest włączone. Ustawienie to może jednak doprowadzić do zbytniego zużycia akumulatora, **jeżeli dany samochód nie ma specjalnego położenia kluczyka w stacyjce do włączania zasilania przyrządów.** Aby zapobiec zbytniemu zużyciu akumulatora podczas użytkowania radia w takim samochodzie, **należy przestawić przełącznik POWER SELECT umieszczony na spodzie urządzenia w pozycji ⓫, a następnie nacisnąć przycisk reset.** Oświetlenie przedniej ścianki będzie włączać się teraz tylko podczas użytkowania radia.

Uwaga

Sygnał alarmowy przedniej ścianki nie włącza się, gdy przełącznik POWER SELECT znajduje się w pozycji ⓫.

Przycisk reset

Po zakończeniu montażu i podłączenia radia należy pamiętać o wciśnięciu przy pomocy długopisu lub podobnego przedmiotu przycisku reset do nastawiania stanu początkowego.

Свързване

Внимание

- Този апарат е проектиран за експлоатация само с постоянен ток с напрежение 12 В и заземяване на апарата на отрицателната клема на акумулаторната батерия.
- Преди да започнете свързването на апарата, откачете отрицателната клема на акумулаторната батерия, за да избегнете възникването на късо съединение.
- Извършете свързването на **жълтия** и **червения** захранващи ел. проводници само след като сте свързали вече всички останали проводници.
- Свържете червения захранващ ел. проводник към положителната клема под напрежение 12 В, която се захранва с ток, когато ключът за запалване е завъртян в положение за включване на допълнителни уреди.
- **Всички заземяващи проводници свържете към една обща точка.**

Когато апаратът се използува в автомобил, чийто ключ за запалване няма отделно положение за включване на допълнителни уреди

— Превключвател POWER SELECT

Осветлението на предното табло за управление на апарата е фабрично настроено да свети дори, когато апарата не се използува за възпроизвеждане. Това обаче може да доведе до изтощаване на акумулаторните батерии на някои автомобили, **ако апарата се използува в автомобили, чиито ключ за запалване няма отделно положение за включване на допълнителни уреди.** В такъв случай, за да избегнете изтощаването на акумулаторната батерия, **поставете превключвателя POWER SELECT, разположен на долната страна на апарата в положение ⓫ и след това натиснете клавиша RESET.** По този начин се променя настройката на осветлението така, че да не свети, когато уредът не се използува за възпроизвеждане.

Забележка

Предупредителният звуков сигнал за това, че предното табло за управление на апарата не е демонтирано не се задействува, ако превключвателят POWER SELECT е поставен в положение ⓫.

Клавиш RESET

След приключване на инсталирането и свързването, не забравяйте, с върха на химикалка да натиснете клавиша RESET.

Csatlakozások

Figyelem

- Ez a készülék csak 12 V-os negatív földelésű, egyenáramú akkumulátorról üzemeltethető.
- Egy esetleges rövidzárlat elkerülése érdekében vegye le az autó akkumulátorának csatlakozóját a készülék csatlakoztatása előtt.
- A **sárga** és a **piros** színű tápvezetéket csak az összes többi vezeték bekötése után csatlakoztassa.
- A piros vezetéket ahhoz a +12 V-os csatlakozási ponthoz csatlakoztassa, mely áramot kap, ha az indítókulcs félig van elfordítva (ACC-pozíció).
- **Az összes földelővezetéket közös földelőponthoz csatlakoztassa.**

Ha autójában nincs készenléti gyújtás (ACC) pozíció (amikor az indítókulcs félig van elfordítva)

— POWER SELECT kapcsoló

A kezelőlap megvilágítását gyárunkban úgy állították be, hogy az akkor is bekapcsoljon, ha Ön éppen nem használja készülékét. Ez terhelést jelenthet az autó akkumulátora számára, **ha a készüléket olyan autóban használja, melynek nincs készenléti gyújtás (ACC) pozíciója.** Ha el akarja kerülni az akkumulátor terhelését, úgy **állítsa a készülék alján található POWER SELECT (tápfeszültség választó) kapcsolót a ⓫ állásba, majd nyomja meg a Reset gombot.** A kezelőlap megvilágítása így nem kapcsol be, ha Ön nem használja készülékét.

Tudnivaló

Ha a POWER SELECT kapcsoló ⓫ állásba van állítva, úgy em működik a kezelőlap figyelmeztető funkciója.

Reset gomb

Ha befejezte készüléke beszerelését és csatlakoztatását, feltétlenül nyomja meg a Reset gombot egy golyóstollal, vagy más hasonló eszközzel.

Подключения

Предостережение

- Аппарат предназначен для эксплуатации только при подключении к электросети постоянного тока с напряжением 12 В и отрицательной массой.
- До начала установки во избежание короткого замыкания отсоедините клемму массы от аккумуляторной батареи автомашины.
- Подключайте электропровода питания **красного** и **желтого** цвета только после подключения всех прочих проводов.
- Убедитесь в том, что красный электропровод подключен к положительной клемме источника тока с напряжением 12 В, которая оказывается под током при повороте ключа зажигания в положение для пользования вспомогательными электроприборами.
- **Подключите все провода, выводимые на массу, к одному общему контакту.**

Эксплуатация аппарата на автомашинах, где ключ зажигания не может быть установлен в специальное положение для пользования вспомогательными электроприборами

— Переключатель POWER SELECT

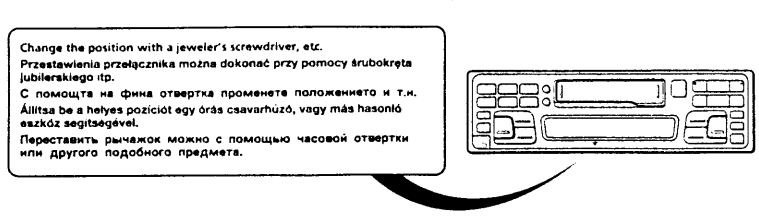
Этот переключатель установлен на заводе-изготовителе в режим, при котором передняя панель аппарата подсвечивается, даже когда Вы не пользуетесь аппаратом. Это, однако, может приводить к небольшой потере заряда аккумуляторной батареи **на автомашинах, где не предусмотрено специальное положение ключа зажигания для пользования вспомогательными электроприборами.** Во избежание этого в случае установки аппарата на такой автомашине **переведите переключатель POWER SELECT на нижней стороне корпуса в положение ⓫, а затем нажмите кнопку возврата в исходное положение.** Теперь подсветка будет включаться только на время пользования аппаратом.

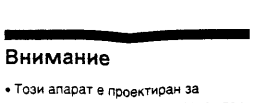
Примечание

Если переключатель POWER SELECT находится в положении ⓫, то сигнал напоминания о передней панели не включается.

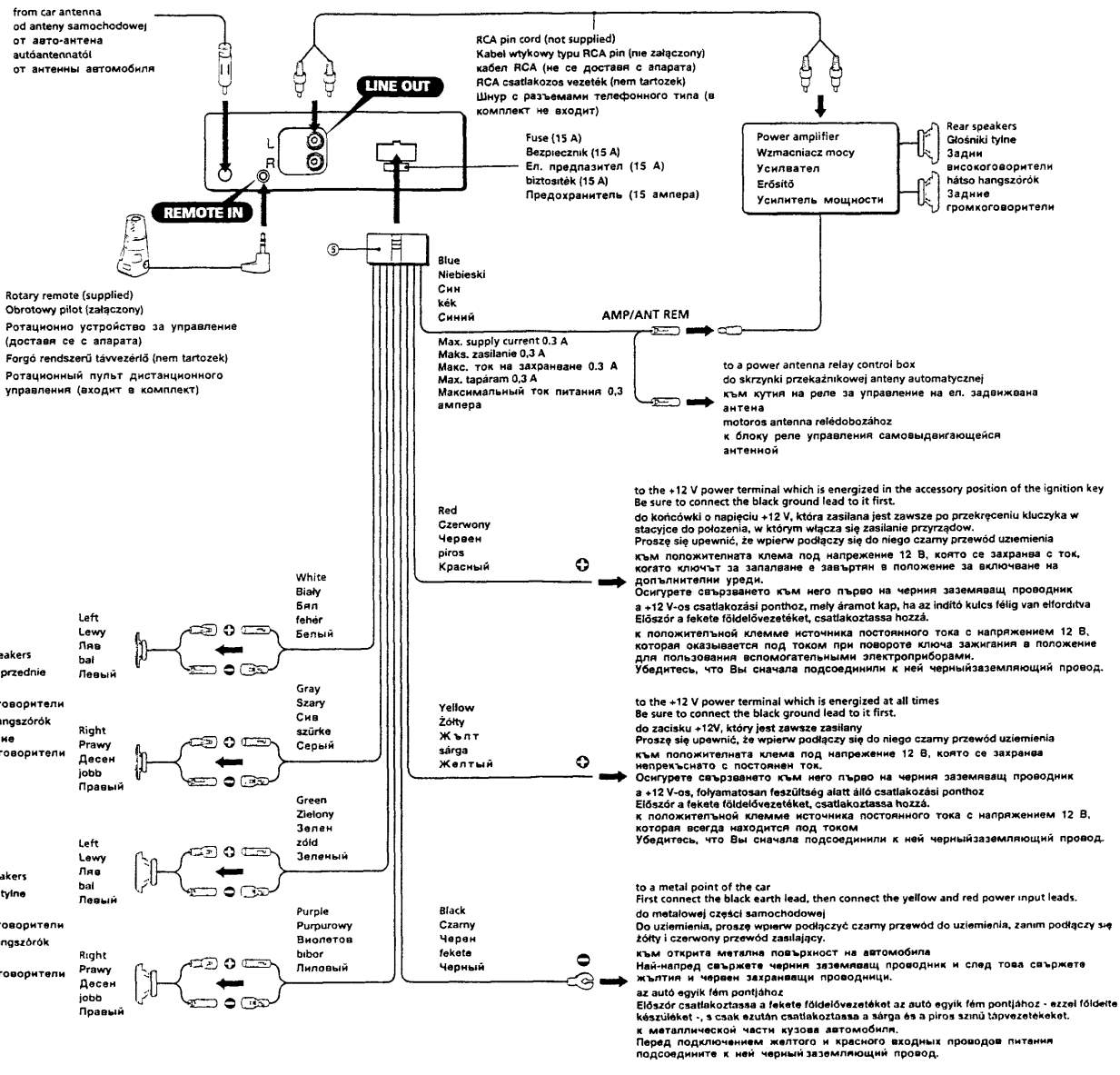
Кнопка возврата в исходное положение

По завершении установки и подключения аппарата не забудьте нажать кнопку возврата в исходное положение. Это можно сделать острием шариковой ручки или с помощью другого подобного предмета.


Change the position with a jeweler's screwdriver, etc.
Przestawienia przełącznika można dokonać przy pomocy śrubokręta jubilerskiego itp.
С помощта на фина отвертка променете положението и т.н.
Állítsa be a helyes pozíciót egy órás csavarhúzó, vagy más hasonló eszköz segítségével.
Переставить рычажок можно с помощью часовой отвертки или другого подобного предмета.



Connection Example | Przykład podłączenia | Примерно свързване | Csatlakoztatási példák | Пример подключения


from car antenna
od anteny samochodowej
от авто-антена
autóantennától
от антенны автомобиля
RCA pin cord (not supplied)
Kabel wtykowy typu RCA pin (nie załączony)
кабел RCA (не се доставя с апарата)
RCA csatlakozos vezeték (nem tartozek)
Шнур с разъемами телефонного типа (в комплект не входит)
LINE OUT
REMOTE IN
Fuse (15 A)
Bezpiecznik (15 A)
Ел. предпазител (15 A)
biztosíték (15 A)
Предохранитель (15 ампера)
Power amplifier
Wzmacniacz mocy
Усилвател
Erősítő
Усилитель мощности
Rear speakers
Głośniki tylne
Задни високоговорители
hátso hangszórók
Задние громкоговорители
Rotary remote (supplied)
Obrotowy pilot (załączony)
Ротационно устройство за управление (доставя се с апарата)
Forgó rendszerű távvezérlő (nem tartozek)
Ротационный пульт дистанционного управления (входит в комплект)
Blue
Niebieski
Син
kék
Синий
AMP/ANT REM
Max. supply current 0.3 A
Maks. zasilanie 0,3 A
Макс. ток на захранване 0.3 A
Max. tápáram 0,3 A
Максимальный ток питания 0,3 ампера
to a power antenna relay control box
do skrzynki przekaźnikowej anteny automatycznej
към кутия на реле за управление на ел. задвижвана антена
motoros antenna relédobozához
к блоку реле управления самовыдвигающейся антенной
Red
Czerwony
Червен
piros
Красный
to the +12 V power terminal which is energized in the accessory position of the ignition key
Be sure to connect the black ground lead to it first.
do końcówki o napięciu +12 V, która zasilana jest zawsze po przekręceniu kluczyka w stacyjce do położenia, w którym włącza się zasilanie przyrządów.
Proszę się upewnić, że wpierw podłączy się do niego czarny przewód uziemienia
към положителната клема под напрежение 12 В, която се захранва с ток, когато ключът за запалване е завъртян в положение за включване на допълнителни уреди.
Осигурете свързването към него първо на черния заземяващ проводник
a +12 V-os csatlakozási ponthoz, mely áramot kap, ha az inditó kulcs félig van elfordítva
Először a fekete földelővezetéket, csatlakoztassa hozzá.
к положительной клемме источника постоянного тока с напряжением 12 В, которая оказывается под током при повороте ключа зажигания в положение для пользования вспомогательными электроприборами.
Убедитесь, что Вы сначала подсоединили к ней черныйзаземляющий провод.
White
Biały
Бял
fehér
Белый
Left
Lewy
Ляв
bal
Левый
Front speakers
Głośniki przednie
Предни високоговорители
elülső hangszórók
Передние громкоговорители
Right
Prawy
Десен
jobb
Правый
Gray
Szary
Сив
szürke
Серый
Yellow
Żółty
Жълт
sárga
Желтый
to the +12 V power terminal which is energized at all times
Be sure to connect the black ground lead to it first.
do zacisku +12V, który jest zawsze zasilany
Proszę się upewnić, że wpierw podłączy się do niego czarny przewód uziemienia
към положителната клема под напрежение 12 В, която се захранва непрекъснато с постоянен ток.
Осигурете свързването към него първо на черния заземяващ проводник
a +12 V-os, folyamatosan feszültség alatt álló csatlakozási ponthoz
Először a fekete földelővezetéket, csatlakoztassa hozzá.
к положительной клемме источника постоянного тока с напряжением 12 В, которая всегда находится под током
Убедитесь, что Вы сначала подсоединили к ней черныйзаземляющий провод.
Green
Zielony
Зелен
zöld
Зеленый
Left
Lewy
Ляв
bal
Левый
Rear speakers
Głośniki tylne
Задни високоговорители
hátsó hangszórók
Задние громкоговорители
Right
Prawy
Десен
jobb
Правый
Purple
Purpurowy
Виолетов
bibor
Лиловый
Black
Czarny
Черен
fekete
Черный
to a metal point of the car
First connect the black earth lead, then connect the yellow and red power input leads.
do metalowej części samochodowej
Do uziemienia, proszę wpierw podłączyć czarny przewód do uziemienia, zanim podłączy się żółty i czerwony przewód zasilający.
към открита метална повърхност на автомобила
Най-напред свържете черния заземяващ проводник и след това свържете жълтия и червен захранващи проводници.
az autó egyik fém pontjához
Először csatlakoztassa a fekete földelővezetéket az autó egyik fém pontjához - ezzel földelte a készüléket -, s csak ezután csatlakoztassa a sárga és a piros színű tápvezetékeket.
к металлической части кузова автомобиля.
Перед подключением желтого и красного входных проводов питания подсоедините к ней черный заземляющий провод.

Notes on the control leads
- *The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner, or when you activate the ATA (Automatic Tuner Activation) function.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

Uwagi odnośnie przewodów kontrolnych
- *Przewód kontrolny anteny automatycznej (niebieski) dostarcza +12V DC po włączeniu radia lub po włączeniu funkcji ATA (Automatic Tuner Activation - automatyczne dostrajanie).*
- *Do niniejszego urządzenia nie można używać anteny automatycznej bez skrzynki przekaźnikowej.*

Zasilanie pamięci
Jeżeli podłączyło się żółty wejściowy przewód zasilający, obwód pamięci będzie zawsze zasilany nawet po wyłączeniu stacyjki.

Uwagi odnośnie podłączania głośników
- *Przed podłączeniem głośników należy wyłączyć radio.*
- *Stosować głośniki o impedancji 4 do 8 omów i o odpowiedniej obciążalności mocowej, gdyż w innym przypadku może dojść do ich uszkodzenia.*
- *Nie podłączać przewodów układu głośników do podwozia samochodu, a przyłączy głośnika prawego nie łączyć z przyłączami głośnika lewego.*
- *Nie podłączać głośników równolegle.*
- *Nie podłączać do urządzenia głośników aktywnych (z wbudowanymi wzacniaczami), może to bowiem doprowadzic do ich uszkodzenia. Podłączać wyłącznie głośniki pasywne.*

Забележки по проводниците за управление
- *По ел. проводник за управление на ел. задвижвана антена се подава ръв ток с напрежение от 12 В при включване на радиоапарата или когато действува функция ATA (автоматично включване на радиоапарат)*
- *Ел. задвижвана антена без собствена кутия с реле, не може да бъде използувана с този апарат.*

Захранване за съхранение на паметта.
При свързан захранващ зелен проводник, към устройството за запаметяване се подава ток дори, когато ключът за запалване е в положение "изключено".

Забележки по свързването на високоговорителите
- *Изключете апарата преди да започнете свързването на високоговорителите.*
- *Използувайте високоговорители с ел. съпротивление (импеданс) от 4 до 8 ома и с подходяща мощност според силата на усилвателя. В противен случай е възможно да повредите високоговорителите.*
- *Не оставяйте изходните клеми за присъединяване на високоговорители в контакт с открити метални части от шасито на автомобила или пък клемите за подаване на сигнал към ляв и десен високоговорител в прек контакт една с друга.*
- *Не свързвайте успоредно високоговорителите.*
- *Не свързвайте активни високоговорители (с вграден в тях усилвател) към клемите за изходен сигнал на апарата. В противен случай е възможно да повредите активните високоговорители. Ето защо е необходимо да се уверите че свързвате пасивни високоговорители.*

Tudnivalók a vezérlővezetékekről.
- *A motoros antenna vezérlővezeték (kék) 12 V egyenfeszültséget kap, ha bekapcsolja a rádiót, az ATA (Automatic Tuner Activation - Automatikus Rádió Aktiválás) funkciót.*
- *Ha a készülékhez motoros antennát csatlakoztat, úgy kizárólag relédobozzal felszerelt motoros antennát használjon.*

Memóriafenntartás
Ha csatlakoztatja a sárga tápvezetéket, úgy folyamatosan feszültség alatt marad a memóna áramkór. meg akkor is, ha kikapcsolja a gyujtást.

Tudnivalók a hangszórók csatlakoztatásáról
- *Kerjük kapcsolja ki a készüléket a hangszórók csatlakoztatása előtt.*
- *4-8 ohm impedanciaju, megfelelő teljesítményű hangszorókat használjon, ellenkező esetben ugyanis előfordulhat, hogy a hangszórók karosodnak.*
- *Ne csatlakoztassa a hangszorokat az auto temszerkezetenez es ne csatlakoztassa a jobb hangszorót a bal hangszorohoz.*
- *A hangszorokat semmi esetre se csatlakoztassa parhuzamosan.*
- *Ne csatlakoztasson aktiv (beepitett erősítővel felszerelt) hangszorokat a keszulekhez, ellenkező esetben ugyanis karosodhatnak az aktiv hangszorok. A keszulekhez csak passziv hangszorokat szabad csatlakoztatni.*

Примечания к инструкции по подключению проводов для управления электроприборами
- *Провод (голубой) для управления самовыдвигающейся антенной подаёт постоянный ток напряжением 12 В при включении радиоприемника или включении функции ATA (автоматического включения радиоприемника)*
- *С данным аппаратом нельзя использовать самовыдвигающиеся антенны без реле управления в отдельном корпусе.*

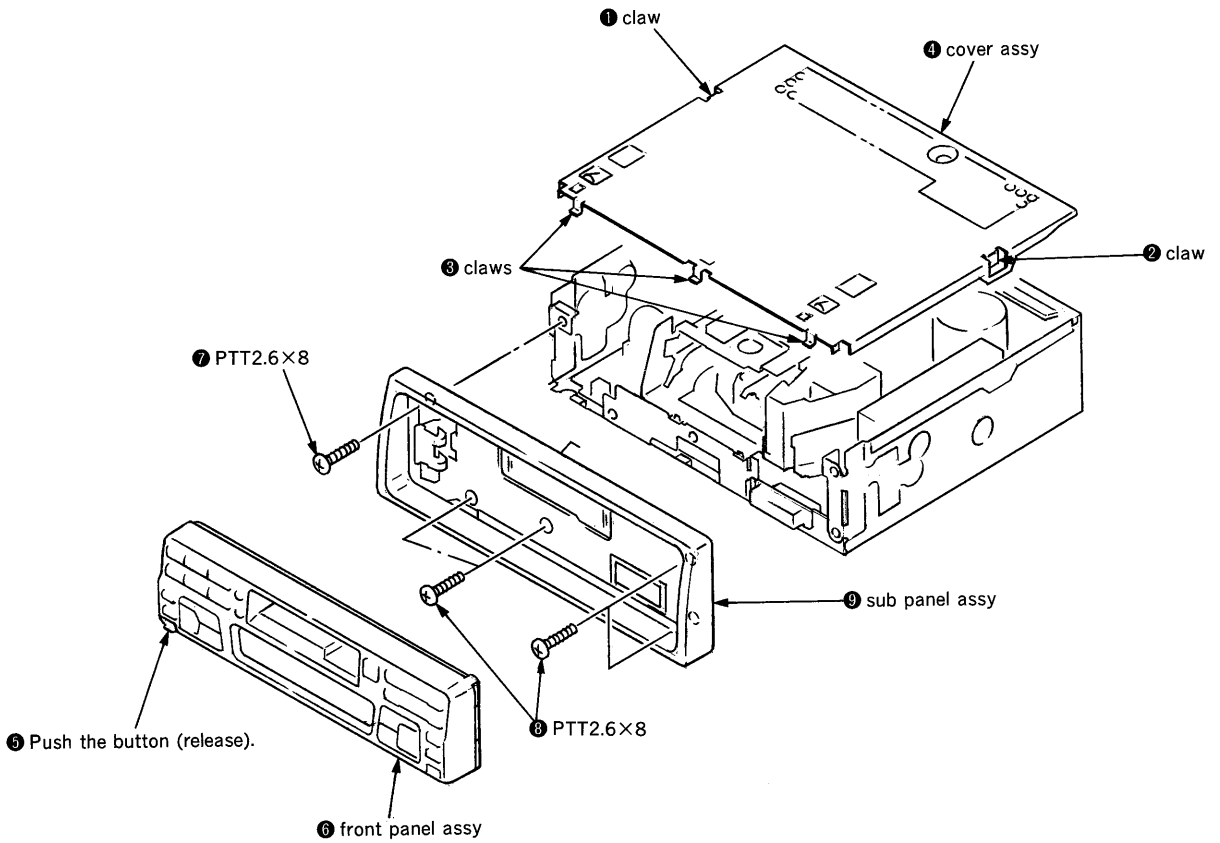
Подпитка запоминающего устройства
Подключение желтого провода питания обеспечивает постоянное наличие тока в цепи запоминающего устройства даже при выключенном зажигании.

Примечания к инструкции по подключению громкоговорителей
- *Перед подключением громкоговорителей аппарат необходимо выключить.*
- *Используйте громкоговорители с электрическим сопротивлением 4-8 Ом, способные принимать достаточно мощные сигналы. В противном случае громкоговорители могут быть повреждены.*
- *Не подключайте контакты системы громкоговорителей к шасси автомашины и не подключайте контакты правого громкоговорителя к контактам левого громкоговорителя.*
- *Не подключайте громкоговорители параллельно.*
- *Не подключайте активных громкоговорителей (т.е. со встроенными усилителями) к контактам аппарата для громкоговорителей, это может привести к повреждению активных громкоговорителей. Поэтому убедитесь, что Вы подключаете к этим контактам пассивные громкоговорители.*

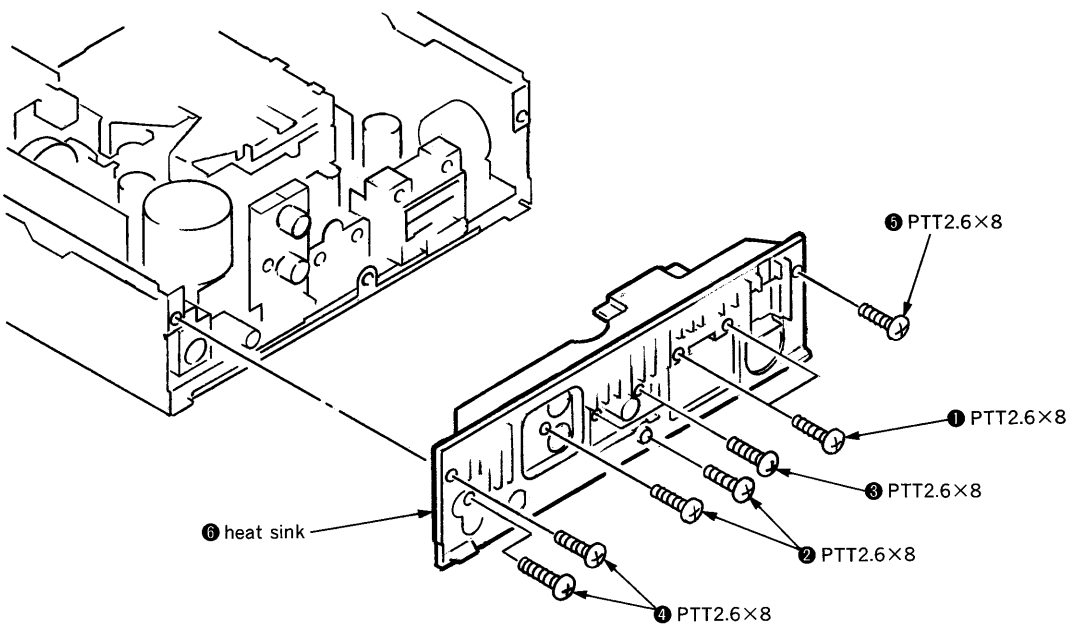
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

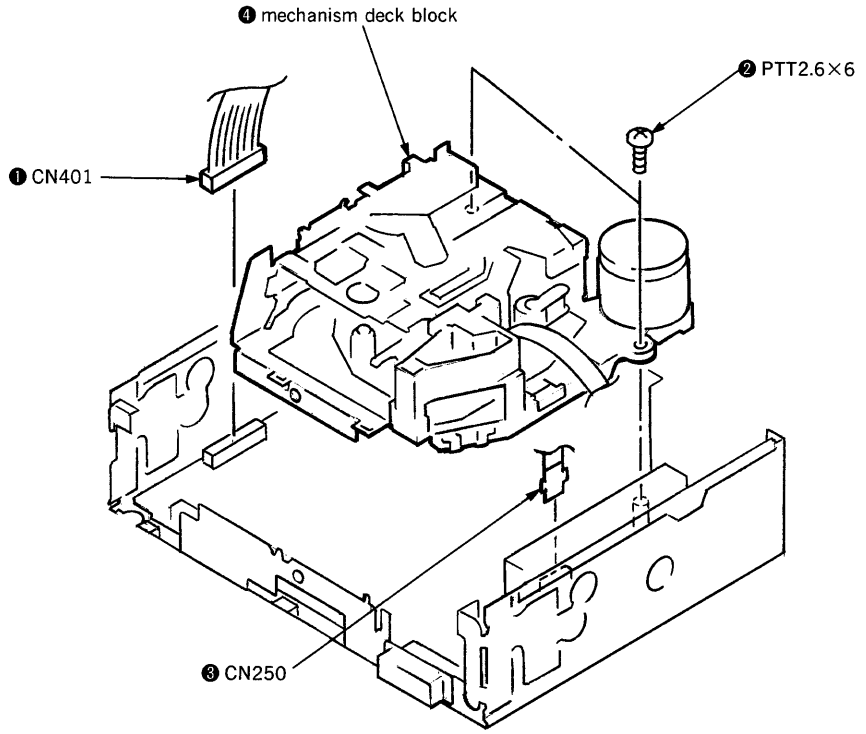
2-1. SUB PANEL ASSY



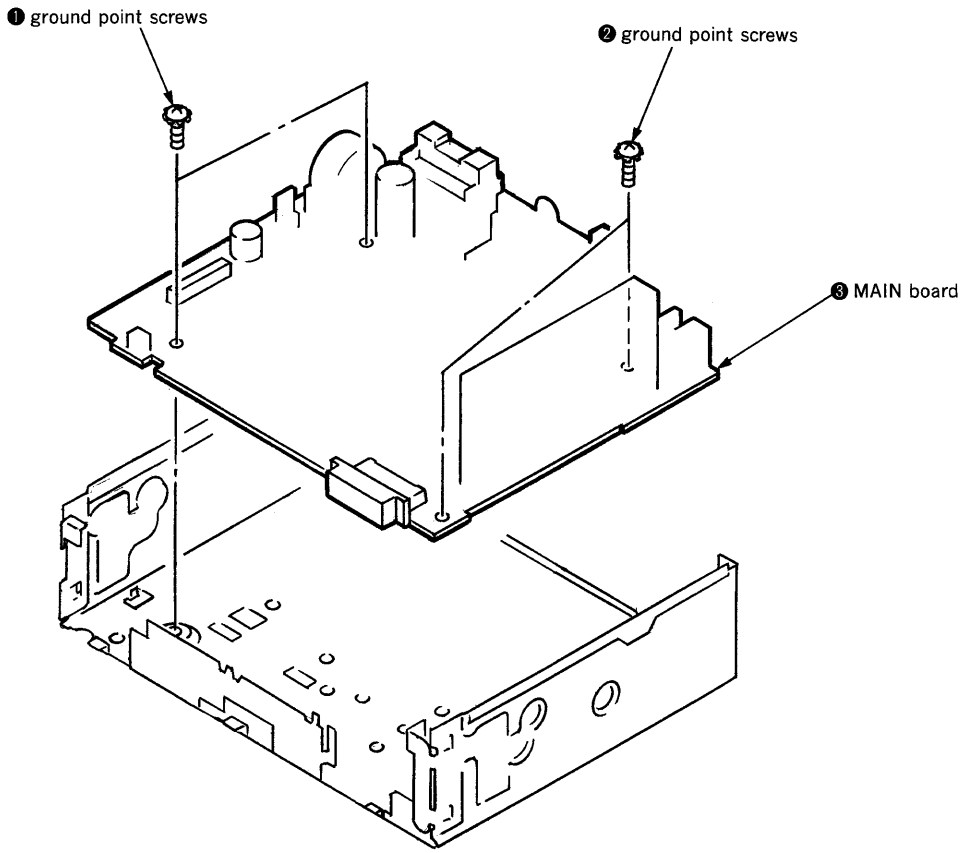
2-2. HEAT SINK



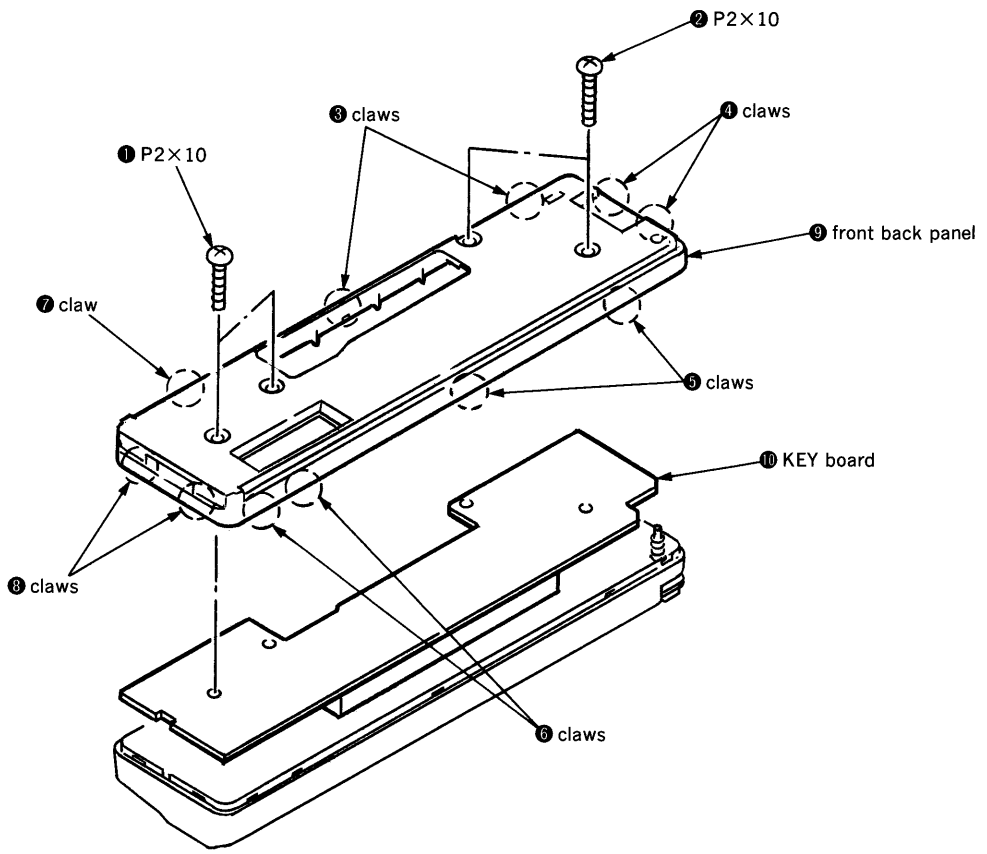
2-3. MECHANISM DECK BLOCK



2-4. MAIN BOARD



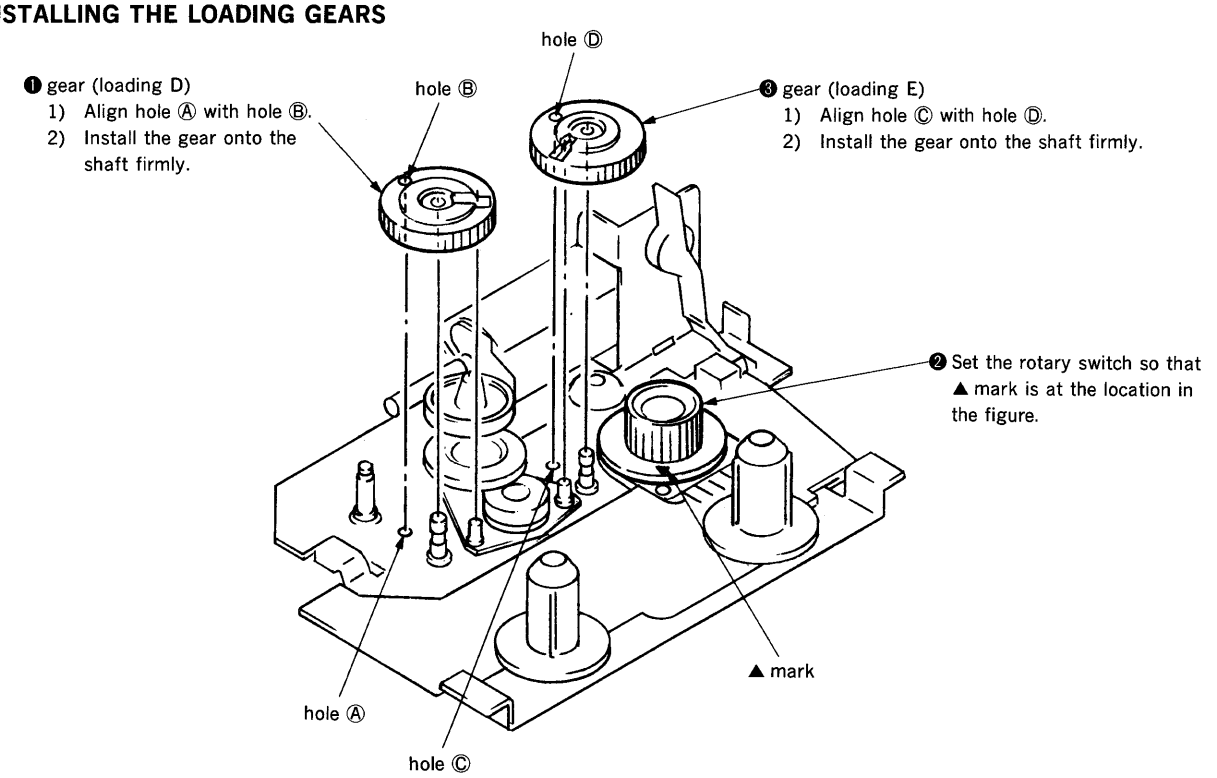
2-5. KEY BOARD


❷ P2×10
❸ claws
❹ claws
❶ P2×10
❾ front back panel
❼ claw
❺ claws
❿ KEY board
❽ claws
❻ claws

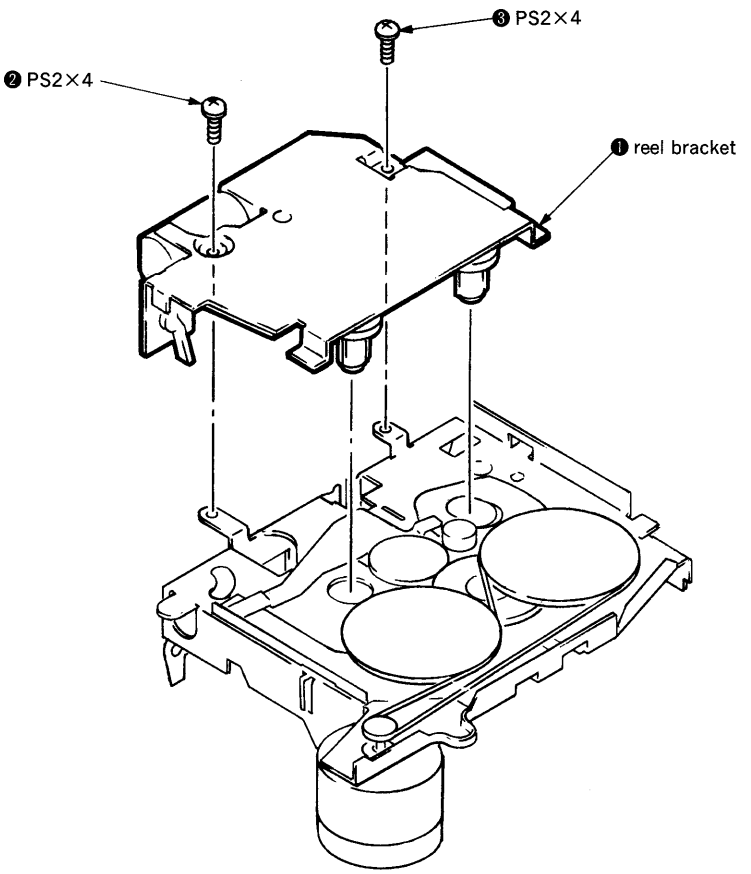
SECTION 3
ASSEMBLY OF MECHANISM DECK

Note : Follow the assembly procedure in the numerical order given.

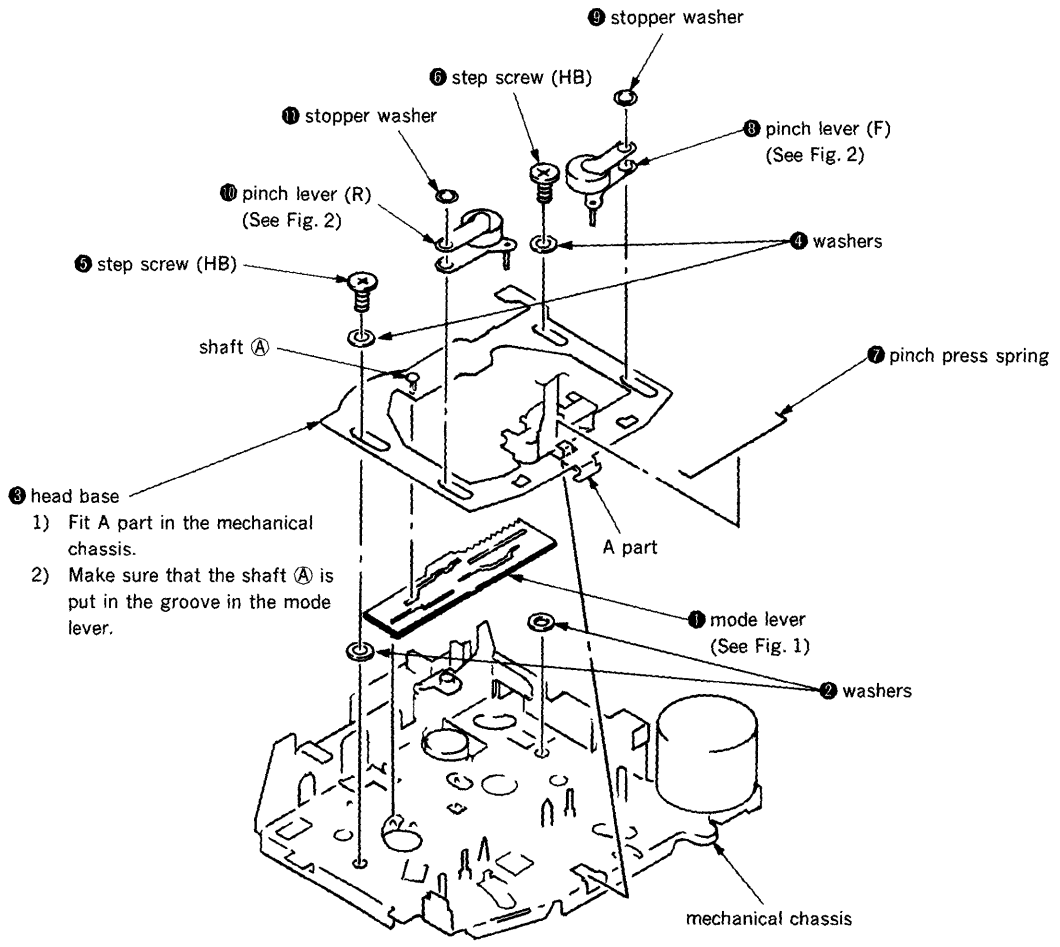
3-1. INSTALLING THE LOADING GEARS


❶ gear (loading D)
1) Align hole Ⓐ with hole Ⓑ.
2) Install the gear onto the shaft firmly.
hole Ⓑ
hole Ⓓ
❸ gear (loading E)
1) Align hole Ⓒ with hole Ⓓ.
2) Install the gear onto the shaft firmly.
❷ Set the rotary switch so that ▲ mark is at the location in the figure.
▲ mark
hole Ⓐ
hole Ⓒ

3-2. INSTALLING THE REEL BRACKET



3-3. INSTALLING THE MODE LEVER AND PINCH LEVERS



1) Align • mark on the rotary switch with hole on the mode lever.
2) Make sure that the two shafts and three projections are located as shown below.

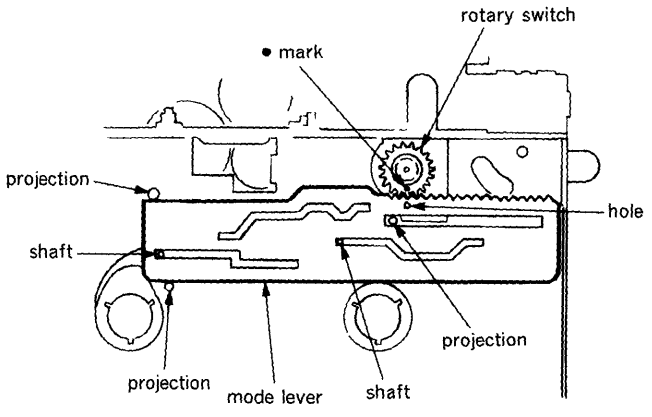


Fig. 1

1) Put the shafts of the pinch levers in the pinch press spring on its head side.

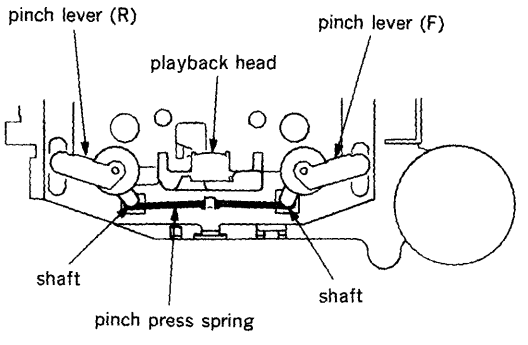
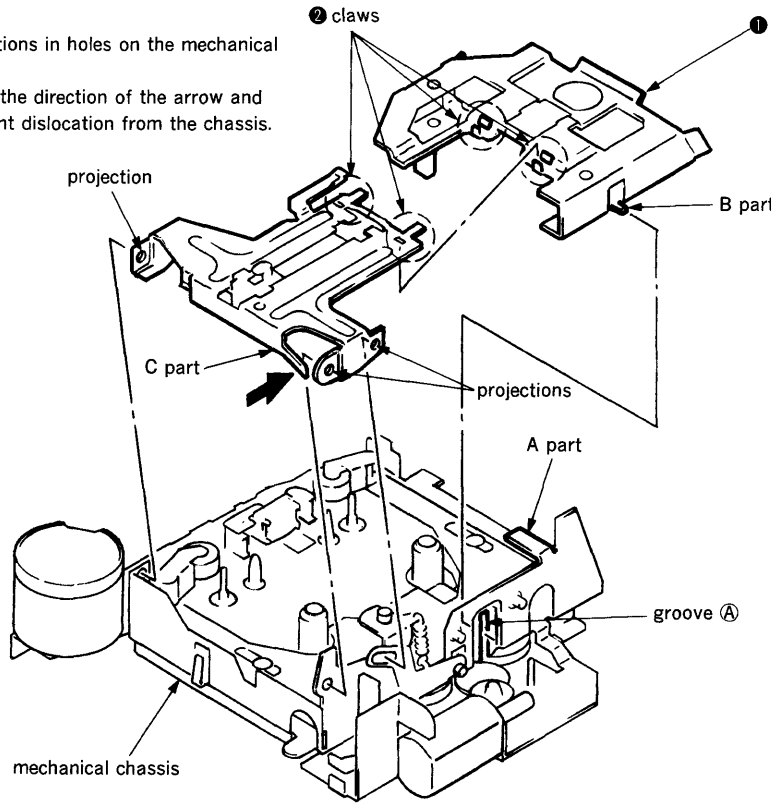


Fig. 2

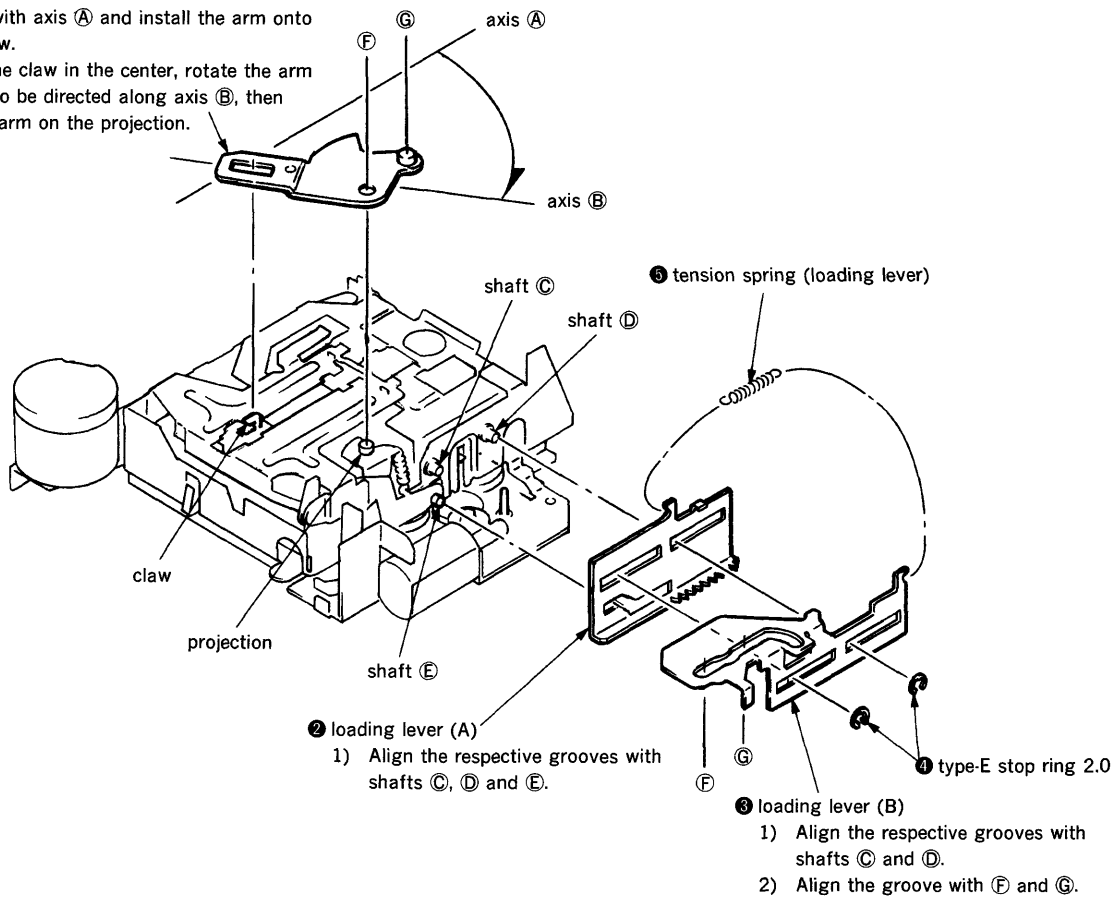
3-4. INSTALLING THE CASSETTE HOUSING

❸ housing hanger
1) Fit three projections in holes on the mechanical chassis.
2) Bend C part in the direction of the arrow and fasten to prevent dislocation from the chassis.

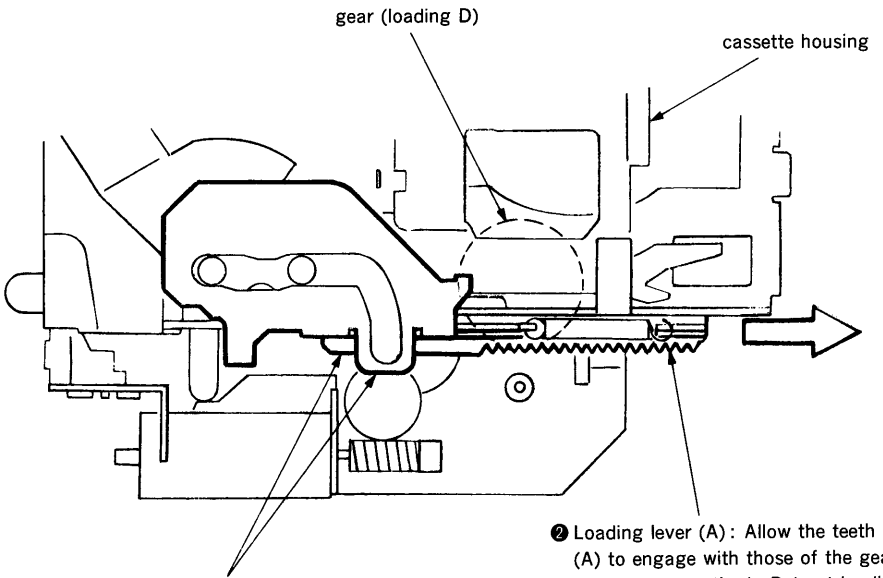


3-5. INSTALLING THE LOADING LEVER

❶ suction arm
1) Align with axis Ⓐ and install the arm onto the claw.
2) With the claw in the center, rotate the arm so as to be directed along axis Ⓑ, then fit the arm on the projection.



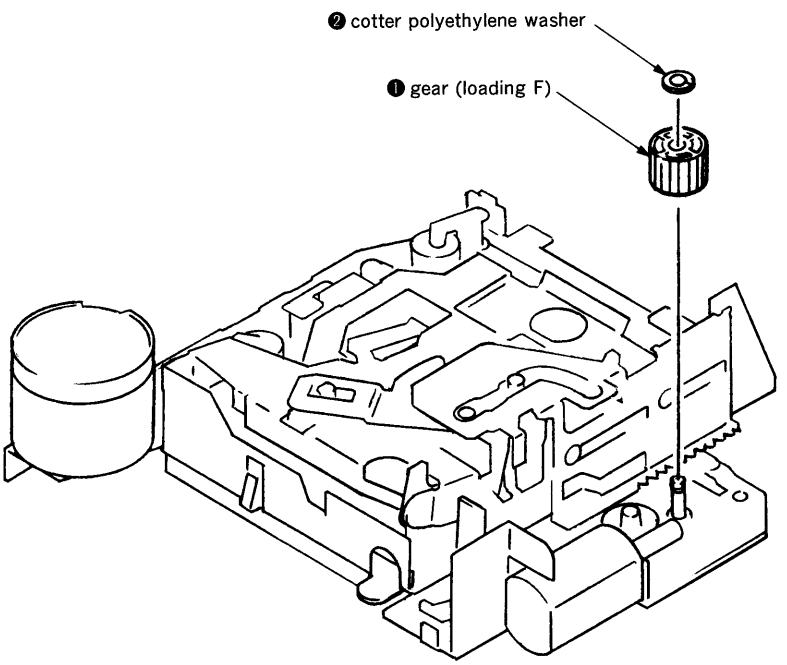
3-6. POSITIONING THE LOADING LEVERS



❷ Loading lever (A): Allow the teeth of loading lever (A) to engage with those of the gear (loading D).
(Adjustment method: Retract loading lever (A) by 0.2 to 0.5mm in the opposite direction of the arrow.)

❶ Loading levers (A) and (B): Move loading levers (A) and (B) in the direction of the arrow.
(The cassette housing is put down fully at this time.)

3-7. INSTALLING THE GEAR (LOADING F)



SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	30−65g•cm (0.42−0.90 oz•inch)
FWD Back Tension		0.5−4.5g•cm (0.01−0.06 oz•inch)
REV	CQ-102RC	30−65g•cm (0.42−0.90 oz•inch)
REV Back Tension		0.5−4.5g•cm (0.01−0.06 oz•inch)
FF, REW	CQ-201B	60−200g•cm (0.83−2.78 oz•inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 90g (more than 3.18 oz)
REV	CQ-403R	

SECTION 5
ELECTRICAL ADJUSTMENTS

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and MW Auto Scan/Stop Level adjustments can be performed easier than it in ordinary procedure.

〈Set the Test Mode〉

1. Set the "OFF" mode.
2. Push the preset [4] button.
3. Push the preset [5] button.
4. Press the preset [1] button for more than two seconds.
5. Then the display indicates all lights, the test mode is set.

〈Release the Test Mode〉

1. Push the "OFF" button.

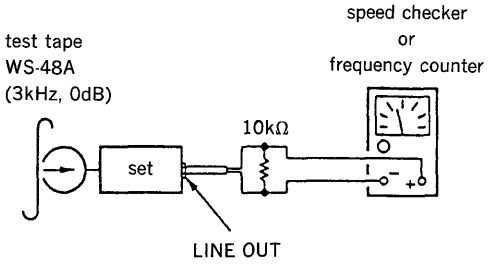
See the adjustment location from on page 19 for the adjustment.

DECK SECTION　**0dB=0.775V**

Tape Speed Adjustment

Procedure:

1. Put the set into the FWD PB mode.



Specification: Constant speed

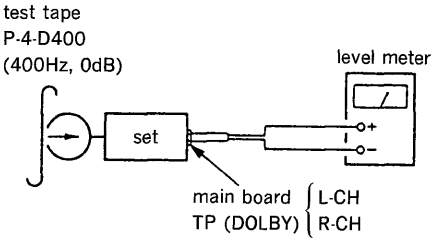
Speed checker	Frequency counter
−1.5 to +2.5%	2,955 to 3,075Hz

Adjustment Location: See page 19.

DOLBY Level Adjustment

Setting:

Preset [3] (DOLBY) button : OFF
SEL (BAS) button : Center
SEL (TRE) button : Center
SEL (BAL) button : Center
SEL (FAD) button : Center
SEL (VOL) button : Maximum



Procedure:

1. Put the set into the FWD PB mode.
2. Adjust RV101 (L-CH) and RV201 (R-CH) so that level meter reading is −4.7±0.5 dB (0.43 to 0.48V).
3. Put the set into the REV PB mode.
4. Confirm that level meter reading is within specification value.

Adjustment Location: See page 19.

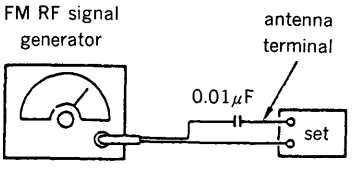
TUNER SECTION **0dB=1μV**

Cautions during repair
When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

FM Auto Scan/Stop Level Adjustment

Setting :

FM button : FM

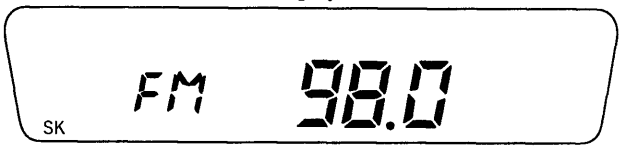


Carrier frequency : 98.0MHz
Output level : 20dB (10μV)
Mode : mono
Modulation : 1kHz, 22.5kHz deviation (30%)

Procedure :

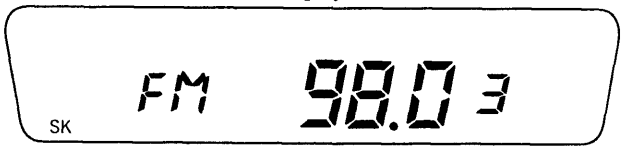
1. Set to the test mode. (See page 16.)
2. Push the [FM] button and set to FM.

Display



3. Push the preset [3] button.

Display



4. Adjust with the volume RV2 on TU1 so that the "FM" indication turns to "FMI" indication on the display window.
   But, in case of already indicated "FMI", turn the RV2 so that put out light "I" indication and adjustment.

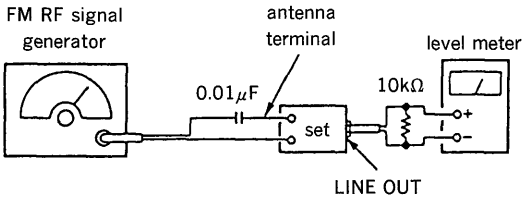
Display

Adjustment Location : See page 19.

FM Stereo Separation Adjustment

Setting :

FM button : FM



Carrier frequency : 98.0MHz
Output level : 70dB (3.2mV)
Mode : stereo
Modulation : main : 1kHz, 20kHz deviation (53%)
sub : 1kHz, 20kHz deviation (53%)
19kHz pilot : 7.5kHz deviation (10%)

Procedure :

FM stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 on TU1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 on TU1 for minimum reading.

L-CH Stereo separation : Ⓐ−Ⓑ
R-CH Stereo separation : Ⓒ−Ⓓ
The separations of both channels should be equal.

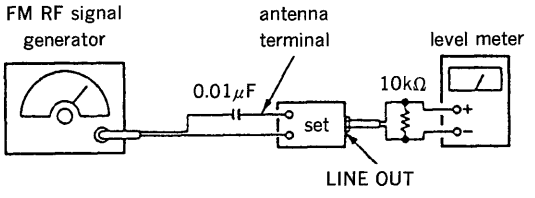
Specification : Separation more than 27dB

Adjustment Location : See page 19.

FM Noise Focus Adjustment

Setting :

FM button : FM



Carrier frequency : 98.0MHz
Output level : 60dB (1mV)
Mode : stereo
Modulation : 1kHz, 75kHz deviation (100%)

Procedure :

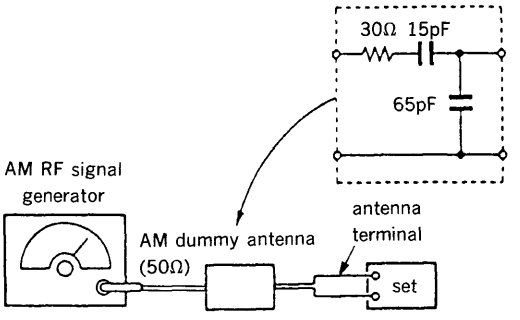
1. Tune the 98.0MHz.
2. The then output level is supposing that (A) dB.
3. Adjust with the volume RV3 on TU1 so that the output level is (A)−30±5dB then signal generator input set to −20dB.

Adjustment Location : See page 19.

MW Auto Scan/Stop Level Adjustment

Setting :

MW/LW button : MW



Carrier frequency : 999kHz
30% amplitude modulation by 1kHz signal
Output level : 33dB (44.7μV)

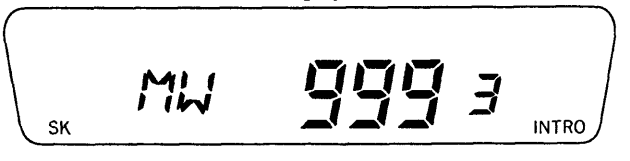
Procedure :

1. Set to the test mode. (See page 16.)
2. Push the [MW/LW] button and set to MW.

Display

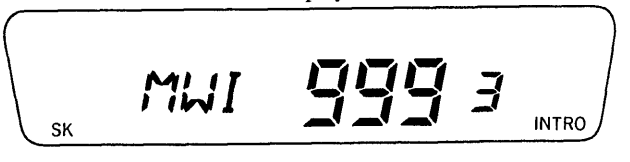
3. Push the preset [3] button.

Display



4. Adjust with the volume RV1 on TU1 so that the "MW" indication turns to "MWI" indication on the display window.
   But, in case of already indicated "MWI", turn the RV1 so that put out light "I" indication and adjustment.

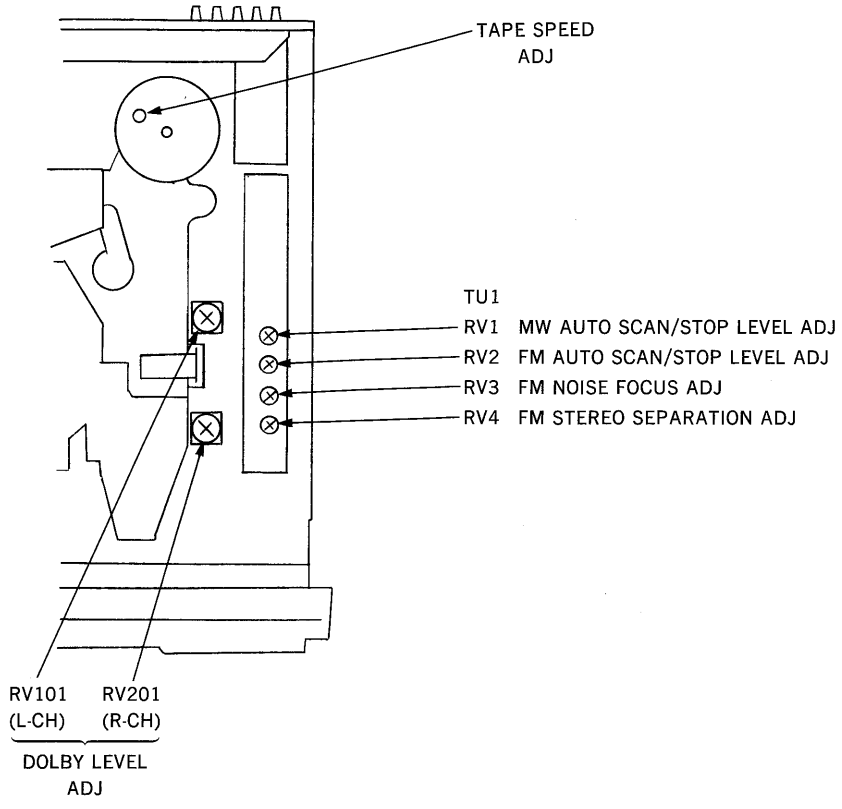
Display



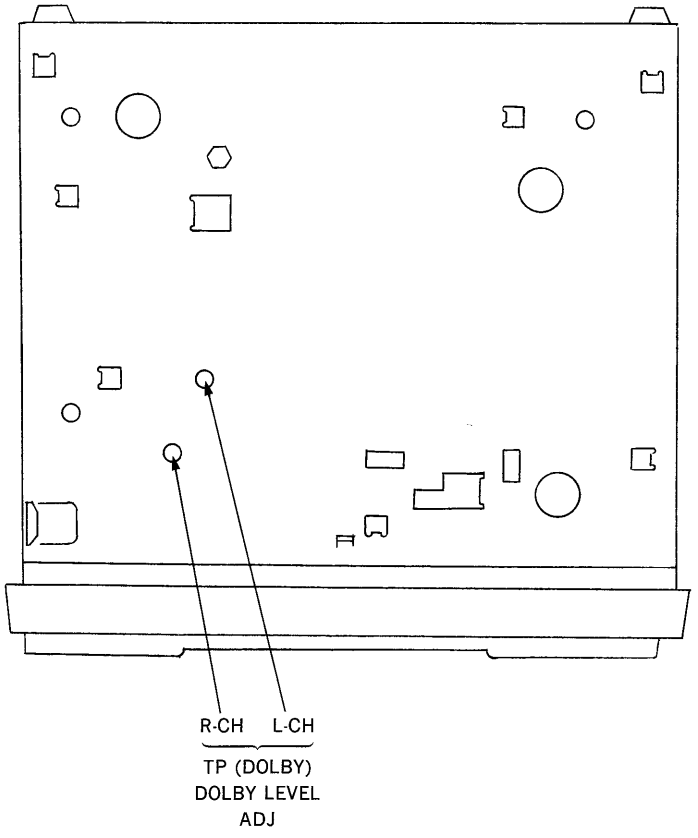
Adjustment Location : See page 19.

Adjustment Location :

—SET UPPER VIEW—



—SET LOWER VIEW—



SECTION 6
DIAGRAMS

6-1. IC PIN DESCRIPTION

• IC501 LC72358-8936 (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Pin Description
1	X IN	I	4.5MHz crystal vibrator connection
2	NC	—	Not used. (Connected to GND.)
3	$\overline{\text{SEEK}}$	O	FM/AM count request terminal
4	MW/$\overline{\text{SW}}$	O	Not used.
5	—	—	Not used.
6	$\overline{\text{LCD INH}}$	O	Control of inhibition display to LCD driver IC.
7	—	—	Not used.
8	VOL DATA	O	E-VOLUME data output terminal
9	VOL CLK	O	E-VOLUME clock output terminal
10	VOL CE	O	E-VOLUME chip enable output terminal
11	$\overline{\text{PANEL IN}}$	I	Panel detect input terminal
12	LCD DATA	O	LCD data output terminal
13	LCD CLK	O	LCD clock output terminal
14	LCD CE	O	LCD chip enable output terminal
15	$\overline{\text{PLAY}}$/ATA	O	R/T control terminal to DOLBY IC.
16	LOAD	O	Loading motor control terminal (Loading)
17	EJECT	O	Loading motor control terminal (Eject)
18	TAPE ON	O	Tape power control terminal
19, 20	—	—	Not used.
21	CODE C1	O	Scan signal output terminal for 9k/10k step select.
22	CODE C0	—	Not used.
23—26	CODE B3—CODE B0	—	Not used.
27	COUNTRY	—	Not used.
28	STEP SEL	—	Not used.
29	DOLBY SEL	—	Not used.
30	P. SEL	I	Power select switching input terminal
31	VDD	—	Power input terminal (+5V)
32	$\overline{\text{TEST1}}$	I	Test mode terminal
33	$\overline{\text{AMS}}$/PLAY	O	AMS/PLAY control terminal
34	$\overline{\text{N}}$/R	O	FWD/REV control terminal
35	$\overline{\text{NOR}}$/MTL	O	NORMAL/METAL tape select terminal
36	DOLBY	O	DOLBY ON/OFF control terminal
37	C. MOTOR	O	Capstan motor control terminal
38	TUNER/$\overline{\text{TAPE}}$	O	TUNER/TAPE select terminal
39	FM/$\overline{\text{AM}}$	O	FM/AM select terminal
40	PRE MUTE	O	LINE MUTE control terminal
41	$\overline{\text{POWER MUTE}}$	O	Power amplifier mute control terminal
42	ILL ON	O	Illumination ON/OFF control terminal
43	POWER ON	O	System power ON/OFF control terminal
44	BEEP	I	BEEP sound output terminal
45, 46	REEL2, REEL1	I	Reel sensor detection input terminal
47	POS4	I	Tape operation detect terminal
48	POS3	I	Tape operation detect terminal
49	POS1	I	Tape operation detect terminal
50	POS2	I	Tape operation detect terminal

Pin No.	Pin Name	I/O	Pin Description
51	RC1	I	Remote commander signal input terminal
52	$\overline{\text{ILLIN}}$	I	Pull-up +5V
53	ST/$\overline{\text{MONO}}$	I/O	Stereo signal input terminal
54	$\overline{\text{AMS IN}}$	I	AMS input terminal
55	$\overline{\text{ACC CHECK}}$	I	ACC detection input terminal
56	$\overline{\text{INT0}}$	I	Wake-up signal input terminal
57—59	—	—	Not used.
60	$\overline{\text{LO}}$/DX	O	LO/DX select output terminal
61—63	KEY2—KEY0	I	Key return signal input terminal
64	BU CHECK	I	Back-up detection input terminal
65	EZ 0	I	Remote commander control input terminal
66	S-METER	I	S meter input terminal
67	$\overline{\text{HOLD}}$	I	PLL control and CLOCK STOP mode control input terminal
68	BACK UP	I	Back-up detection input terminal
69	SD	I	Stop deside on SEEK, auto-memory and scan.
70	IF IN	I	AM IF input terminal
71, 72	—	—	Not used.
73	VDD	—	Power input terminal (+5V)
74	AM IN	I	AM local oscillator input terminal
75	FM IN	I	FM local oscillator input terminal
76	VSS	—	GND
77	—	—	Not used.
78	E-OUT	O	PLL error output terminal
79	NC	—	Not used.(Connected to GND.)
80	X OUT	O	4.5MHz crystal vibrator connection

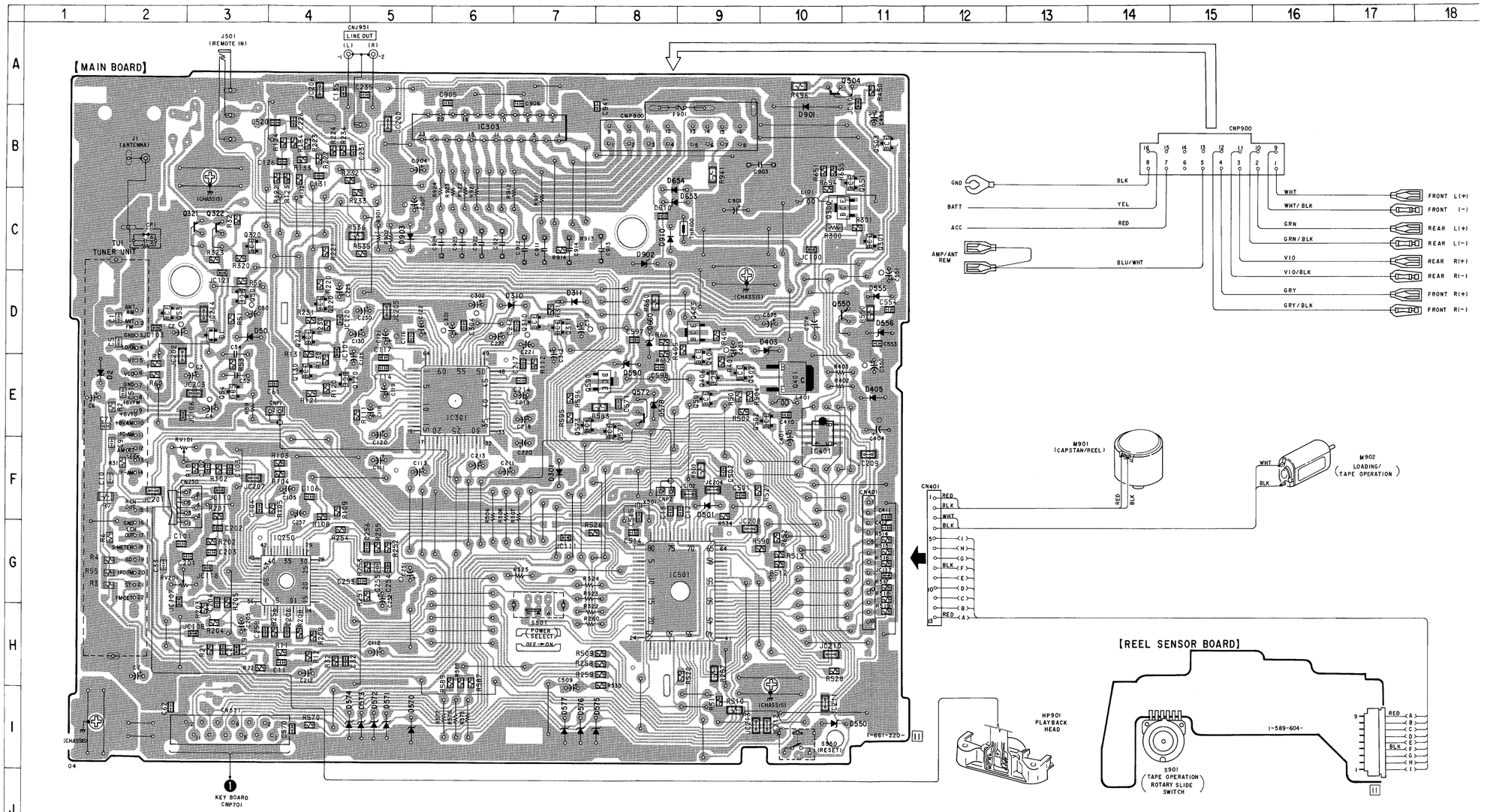
6-2. PRINTED WIRING BOARDS—MAIN SECTION—

● **Semiconductor Location**

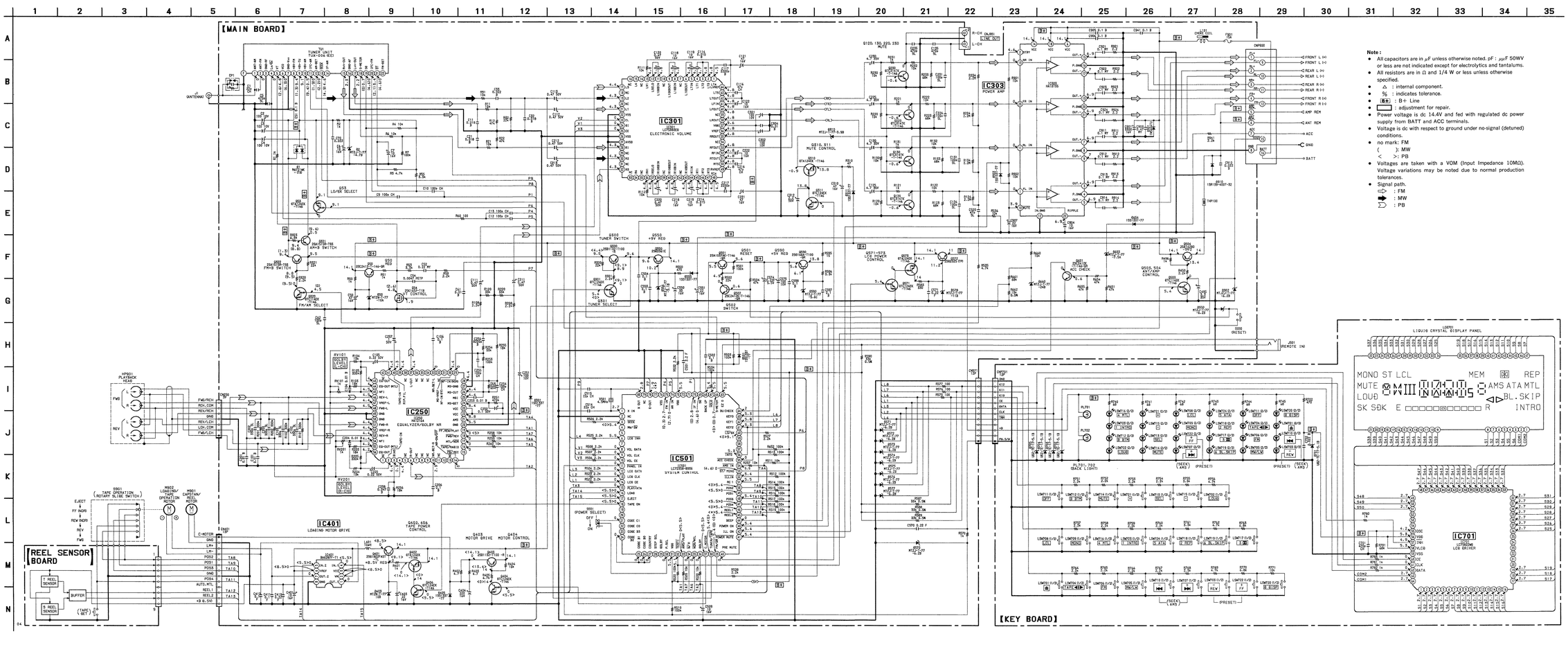
Ref. No.	Location	Ref. No.	Location
D1	D-3	IC401	E-10
D2	E-1	IC501	G-9
D50	D-3		
D301	F-7	Q50	D-3
D310	D-6	Q53	D-2
D311	D-7	Q54	E-3
D403	D-10	Q120	E-4
D405	E-11	Q130	E-4
D501	F-9	Q220	D-4
D550	I-11	Q230	D-4
D555	D-11	Q300	C-10
D556	D-11	Q301	C-11
D570	I-5	Q310	D-7
D571	I-5	Q311	D-7
D572	I-5	Q320	C-3
D573	I-5	Q321	C-3
D574	I-4	Q322	C-3
D575	I-7	Q401	E-10
D576	I-7	Q402	E-9
D577	I-7	Q403	D-10
D578	E-8	Q404	E-9
D590	E-8	Q406	E-9
D653	C-8	Q501	E-9
D654	B-8	Q502	E-9
D660	D-8	Q503	B-11
D901	B-10	Q504	A-10
D902	C-8	Q550	D-10
D903	C-5	Q571	E-8
D910	C-8	Q572	E-8
		Q573	E-7
IC250	G-4	Q590	E-8
IC301	E-6	Q651	B-11
IC303	B-6		

Note :

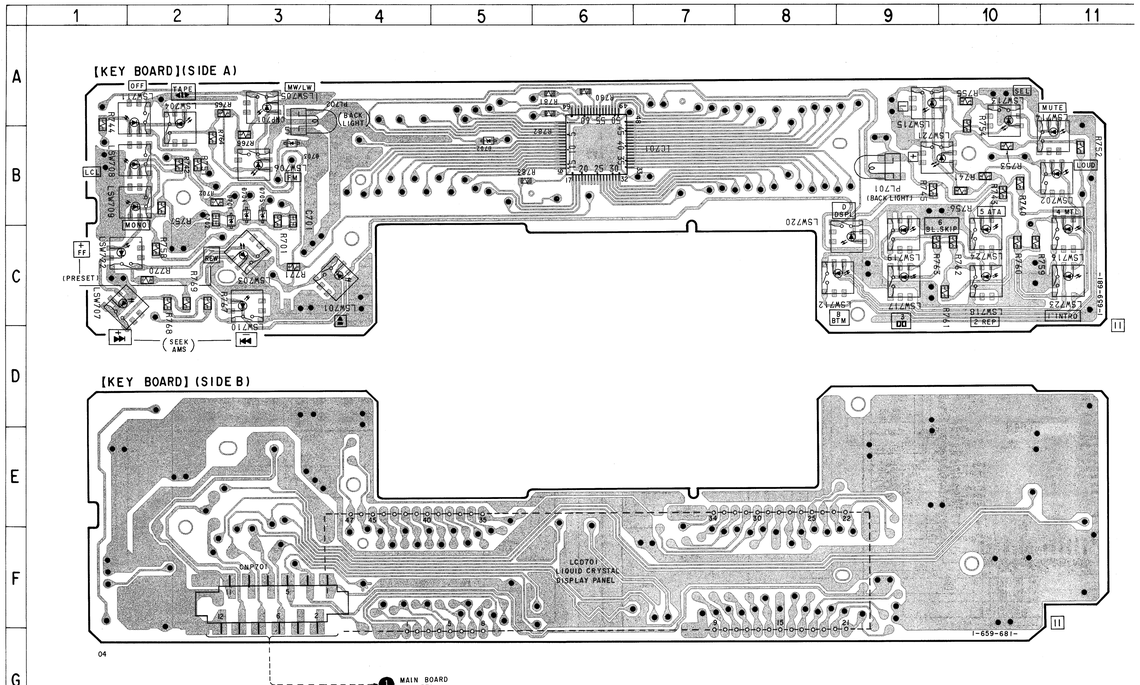
- ○— : parts extracted from the component side.
- ▨ : Pattern on the side which is seen.



6-3. SCHEMATIC DIAGRAM • Refer to page 33 for IC Block Diagrams.



6-4. PRINTED WIRING BOARD—PANEL SECTION—

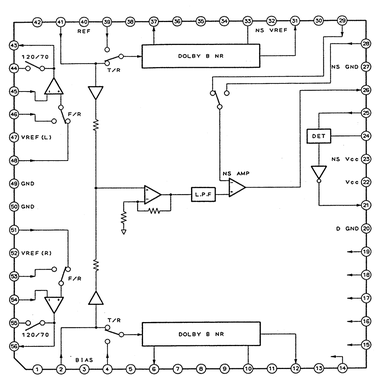


Note :

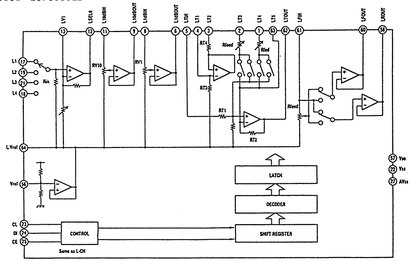
- ● : Through hole.
- ▬ : Pattern on the side which is seen.
  (The other layer's patterns are not indicated.)

• IC Block Diagrams

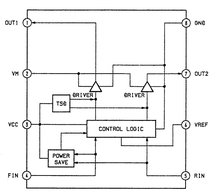
IC250 HA12164



IC301 LC75383ED



IC401 BA6287F-T1

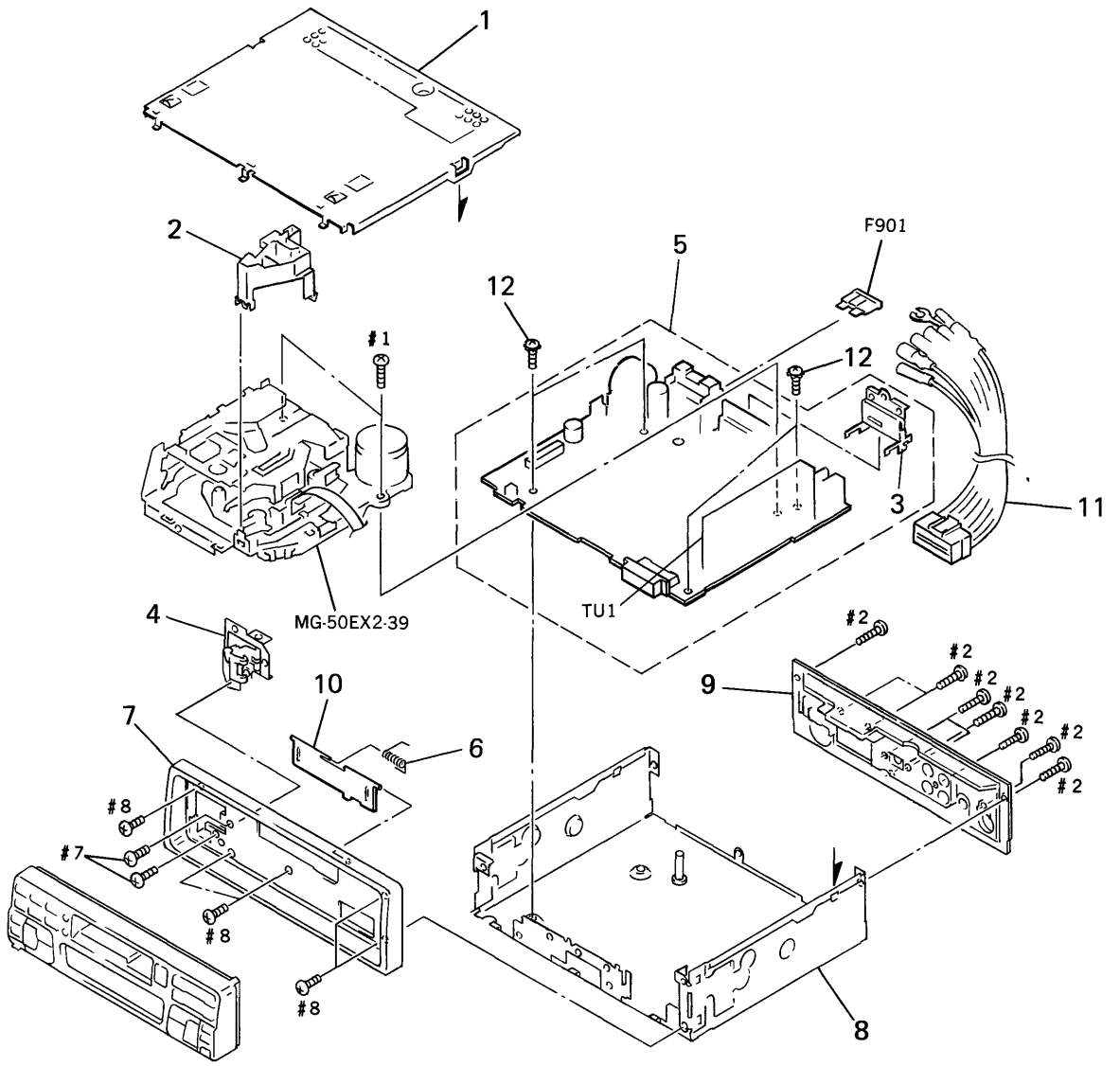


SECTION 7
EXPLODED VIEWS

NOTE:

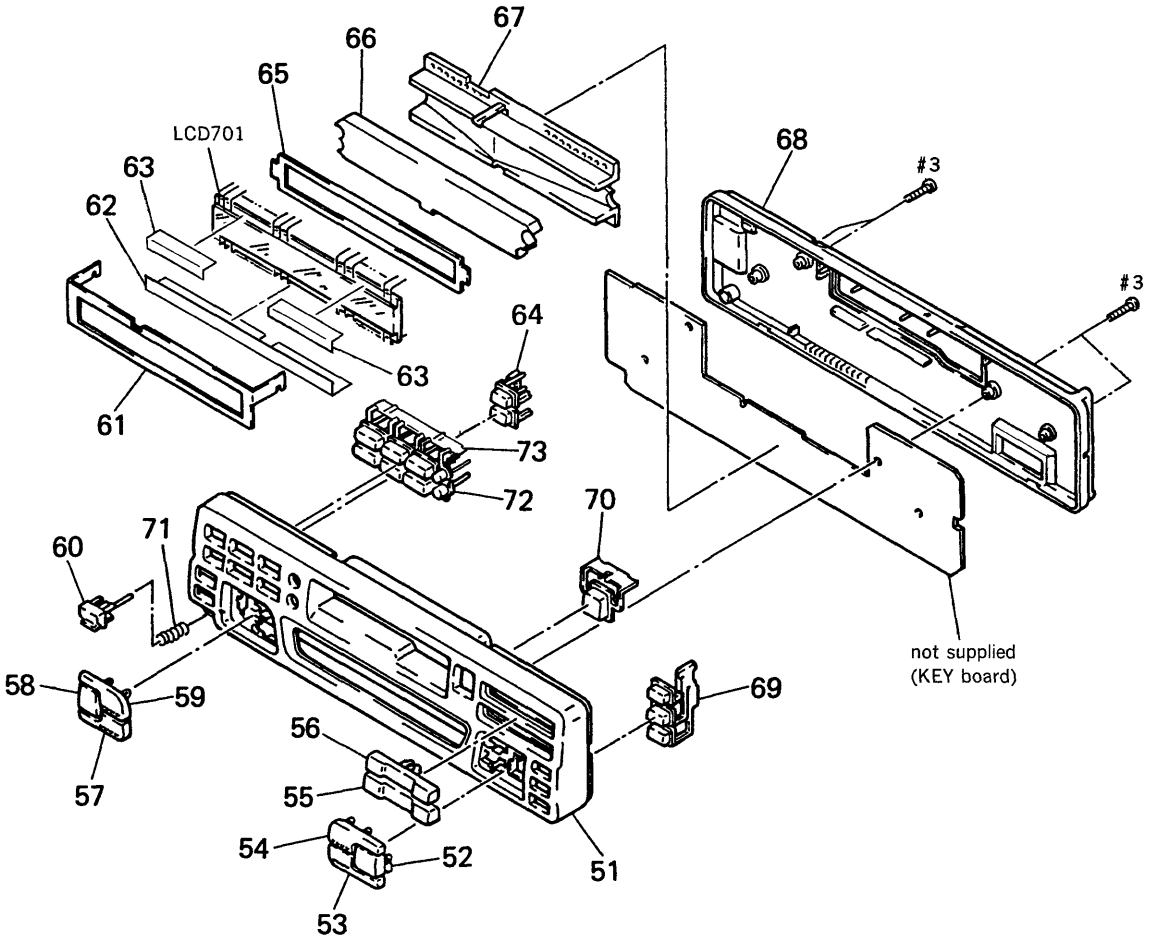
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

7-1. CHASSIS SECTION



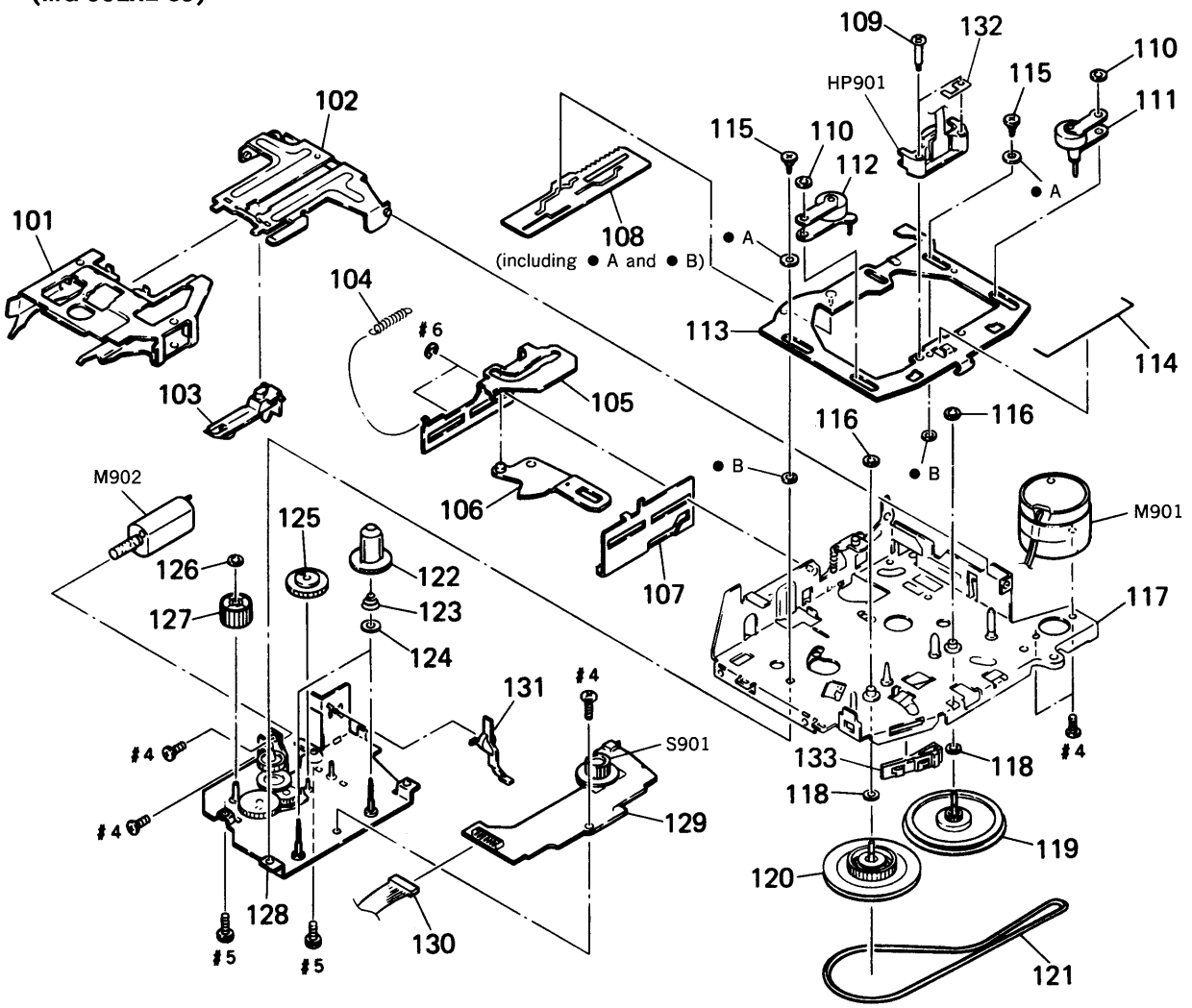
Ref. No.	Part No.	Description	Remark
* 1	X-3371-374-1	COVER ASSY	
2	3-916-872-01	GUIDE	
* 3	3-931-260-01	BRACKET (IC)	
4	X-3367-636-1	LOCK ASSY	
* 5	A-3309-315-A	MAIN BOARD, COMPLETE	
6	3-913-076-01	SPRING (C DOOR), TORSION	
7	3-921-650-04	PANEL, SUB	
* 8	X-3371-376-1	CHASSIS ASSY	
9	3-925-745-01	HEAT SINK	
10	3-931-233-21	DOOR, CASSETTE	
11	1-776-207-31	CORD (WITH CONNECTOR)	
12	3-922-535-11	SCREW (+BTT)	
F901	1-532-982-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	
TU1	A-3282-022-A	TUNER UNIT (TUX-006(EE))	

7-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-932-828-11	PANEL, FRONT	
52	3-929-806-11	BUTTON (TAPE)	
53	3-929-808-11	BUTTON (MW/LW)	
54	3-929-807-01	BUTTON (FM)	
55	3-921-652-21	BUTTON (PRESET)	
56	3-929-811-01	BUTTON (SEEK)	
57	3-929-810-01	BUTTON (-)	
58	3-929-805-01	BUTTON (SEL)	
59	3-929-809-01	BUTTON (+)	
60	3-931-270-01	BUTTON (RELEASE)	
* 61	3-931-264-01	PLATE (LCD), GROUND	
* 62	3-931-272-01	SHEET (LCD-L)	
* 63	3-931-273-01	SHEET (LCD-S)	
64	3-921-903-02	BUTTON (2 GANG)	
* 65	3-931-291-01	SHEET (REFLECTOR)	
* 66	3-931-289-01	PLATE, LIGHT GUIDE	
* 67	3-931-290-01	HOLDER (LCD)	
68	3-921-649-01	PANEL, FRONT BACK	
69	3-921-898-11	BUTTON (3 GANG)	
70	3-921-653-01	BUTTON (EJECT)	
71	3-375-373-01	SPRING (RELEASE)	
72	3-921-655-01	BUTTON (4-6)	
73	3-921-654-01	BUTTON (1-3)	
LCD701	1-801-172-11	DISPLAY PANEL, LIQUID CRYSTAL	

7-3. MECHANISM DECK SECTION (MG-50EX2-39)



Ref. No.	Part No.	Description	Remark
101	3-928-222-01	HOUSING (2), CASSETTE	
102	3-912-882-01	HANGER (2), HOUSING	
103	3-912-884-01	CATCHER	
104	3-912-885-01	SPRING (LOADING LEVER), TENSION	
105	3-923-469-01	LEVER (B-D), LOADING	
* 106	3-912-883-01	ARM, SUCTION	
107	3-922-941-01	LEVER (LOADING A)	
* 108	X-3370-516-2	LEVER (SV) ASSY, MODE	
109	3-927-100-11	SCREW (+PS 2X10), SPECIAL	
110	3-579-788-01	WASHER, STOPPER	
111	X-3368-266-1	PINCH LEVER (F) ASSY	
112	X-3368-267-1	PINCH LEVER (R) ASSY	
113	X-3370-824-1	BASE ASSY (HD2), HEAD	
114	3-912-879-01	SPRING, PINCH PRESS	
115	3-931-184-01	SCREW (HB2), STEP	
116	3-364-151-01	WASHER	
117	X-3368-841-1	CHASSIS (SV) ASSY (A), MECHANICAL	
118	3-701-437-21	WASHER	
119	3-930-932-01	FLYWHEEL (F) (SEF)	

Ref. No.	Part No.	Description	Remark
120	X-3371-303-1	CLUTCH (SEF) ASSY, FR	
121	3-912-896-01	BELT	
122	X-3368-843-1	GEAR ASSY, REEL	
123	3-917-222-01	SPRING (B-T), COIL	
124	3-917-324-01	WASHER (B-T)	
125	3-912-888-03	GEAR (LOADING E)	
126	3-321-813-01	WASHER, COTTER POLYETHYLENE	
127	3-912-889-01	GEAR (LOADING F)	
128	X-3368-842-1	BRACKET (SV) ASSY, REEL	
129	1-589-604-11	REEL SENSOR BOARD	
130	1-765-460-12	CORD (WITH CONNECTOR)	
131	3-916-358-01	LEVER (TAPE IN 2)	
* 132	3-917-258-01	PLATE, GROUND	
133	3-919-553-01	GUIDE (BELT)	
HP901	1-500-196-21	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3368-684-1	MOTOR ASSY, MAIN (CAPSTAN/REEL)	
M902	X-3368-685-1	MOTOR ASSY, SUB (LOADING/TAPE OPERATION)	
S901	1-692-885-11	SWITCH, ROTARY SLIDE (TAPE OPERATION)	

KEY

SECTION 8
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		KEY BOARD			
		********			
*	3-931-264-01	PLATE (LCD), GROUND			
*	3-931-272-01	SHEET (LCD-L)			
*	3-931-273-01	SHEET (LCD-S)			
*	3-931-289-01	PLATE, LIGHT GUIDE			
*	3-931-290-01	HOLDER (LCD)			
*	3-931-291-01	SHEET (REFLECTOR)			
		< CAPACITOR >			
C701	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C702	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
		< CONNECTOR >			
CNP701	1-764-423-11	PIN, CONNECTOR 12P			
		< DIODE >			
D701	8-719-976-99	DIODE	DTZ5.1B		
D702	8-719-976-99	DIODE	DTZ5.1B		
D703	8-719-976-99	DIODE	DTZ5.1B		
D704	8-719-976-99	DIODE	DTZ5.1B		
D705	8-719-976-99	DIODE	DTZ5.1B		
		< IC >			
IC701	8-759-330-60	IC	LC75822WD		
		< LIQUID CRYSTAL DISPLAY >			
LCD701	1-801-172-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< SWITCH >			
LSW701	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (⏏)			
LSW702	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (LOUD)			
LSW703	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (PRESET -/REW)			
LSW704	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (TAPE ◀▮▶)			
LSW705	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (MW/LW)			
LSW706	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (FM)			
LSW707	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (SEEK +, AMS ▶▶)			
LSW708	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (LCL)			
LSW709	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (MONO)			
LSW710	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (SEEK -, AMS ◀◀)			
LSW711	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (OFF)			
LSW712	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (B BTM)			
LSW713	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (SEL)			
LSW714	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (MUTE)			
LSW715	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (-)			
LSW716	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (4 MTL)			
LSW717	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (3 □□)			
LSW718	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (2 REP)			
LSW719	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (6 BL.SKIP)			
LSW720	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (D DSPL)			
LSW721	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (+)			
LSW722	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (PRESET +/FF)			
LSW723	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (1 INTRO)			
LSW724	1-762-141-12	SWITCH, KEY BOARD (WITH LED) (5 ATA)			
		< PILOT LAMP >			
PL701	1-517-406-21	LAMP, PILOT			
PL702	1-517-406-21	LAMP, PILOT			
		< RESISTOR >			
R701	1-216-093-00	METAL CHIP	68K	5%	1/10W
R702	1-216-041-00	METAL CHIP	470	5%	1/10W
R740	1-216-021-00	METAL CHIP	68	5%	1/10W
R741	1-216-021-00	METAL CHIP	68	5%	1/10W
R742	1-216-021-00	METAL CHIP	68	5%	1/10W
R743	1-216-021-00	METAL CHIP	68	5%	1/10W
R744	1-216-021-00	METAL CHIP	68	5%	1/10W
R745	1-216-021-00	METAL CHIP	68	5%	1/10W
R751	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R752	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R753	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R754	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R755	1-216-061-00	METAL CHIP	3.3K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R756	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R757	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R758	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R759	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R760	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R761	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R762	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R763	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R764	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R765	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R766	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R767	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R768	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R769	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R770	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R771	1-216-073-00	METAL CHIP	10K	5%	1/10W
R780	1-216-821-11	METAL CHIP	1K	5%	1/16W
R781	1-216-821-11	METAL CHIP	1K	5%	1/16W
R782	1-216-821-11	METAL CHIP	1K	5%	1/16W
R783	1-216-821-11	METAL CHIP	1K	5%	1/16W

****

* A-3309-315-A MAIN BOARD, COMPLETE

****

* 3-931-260-01 BRACKET (IC)

< CAPACITOR >

C1	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C2	1-124-584-00	ELECT	100uF	20%	10V
C3	1-124-584-00	ELECT	100uF	20%	10V
C4	1-124-584-00	ELECT	100uF	20%	10V
C5	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C6	1-126-157-11	ELECT	10uF	20%	16V
C7	1-126-157-11	ELECT	10uF	20%	16V
C9	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C10	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C11	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C12	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C13	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C21	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C32	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C33	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C52	1-136-169-00	FILM	0.22uF	5%	50V
C54	1-104-683-11	MYLAR	0.0047uF	5%	50V
C50	1-124-589-11	ELECT	47uF	20%	16V
C51	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C61	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C62	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C71	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V

Ref. No.	Part No.	Description			Remark
C101	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C102	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C103	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C104	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C105	1-124-464-11	ELECT	0.22uF	20%	50V
C106	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C111	1-124-465-00	ELECT	0.47uF	20%	50V
C112	1-124-465-00	ELECT	0.47uF	20%	50V
C113	1-124-465-00	ELECT	0.47uF	20%	50V
C114	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C116	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C117	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C118	1-126-157-11	ELECT	10uF	20%	16V
C119	1-126-157-11	ELECT	10uF	20%	16V
C120	1-124-465-00	ELECT	0.47uF	20%	50V
C121	1-124-589-11	ELECT	47uF	20%	16V
C122	1-126-157-11	ELECT	10uF	20%	16V
C125	1-126-163-11	ELECT	4.7uF	20%	50V
C126	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C130	1-126-163-11	ELECT	4.7uF	20%	50V
C131	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C135	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C201	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C202	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C203	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C204	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C205	1-124-464-11	ELECT	0.22uF	20%	50V
C206	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C211	1-124-465-00	ELECT	0.47uF	20%	50V
C212	1-124-465-00	ELECT	0.47uF	20%	50V
C213	1-124-465-00	ELECT	0.47uF	20%	50V
C214	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C216	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C217	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C218	1-126-157-11	ELECT	10uF	20%	16V
C219	1-126-157-11	ELECT	10uF	20%	16V
C220	1-124-465-00	ELECT	0.47uF	20%	50V
C221	1-124-589-11	ELECT	47uF	20%	16V
C222	1-126-157-11	ELECT	10uF	20%	16V
C225	1-126-163-11	ELECT	4.7uF	20%	50V
C226	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C230	1-126-163-11	ELECT	4.7uF	20%	50V
C231	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C235	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C251	1-124-584-00	ELECT	100uF	20%	10V
C252	1-124-463-00	ELECT	0.1uF	20%	50V
C253	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C254	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C255	1-163-251-11	CERAMIC CHIP	100PF	5%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C256	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C257	1-126-160-11	ELECT	1uF	20%	50V
C258	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C301	1-124-584-00	ELECT	100uF	20%	10V
C302	1-124-584-00	ELECT	100uF	20%	10V
C304	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C310	1-124-589-11	ELECT	47uF	20%	16V
C312	1-124-257-00	ELECT	2.2uF	20%	50V
C401	1-126-157-11	ELECT	10uF	20%	16V
C403	1-124-234-00	ELECT	22uF	20%	16V
C404	1-124-120-11	ELECT	220uF	20%	25V
C410	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C411	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C412	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C495	1-126-162-11	ELECT	3.3uF	20%	50V
C501	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C502	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C509	1-126-157-11	ELECT	10uF	20%	16V
C514	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C515	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C520	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C550	1-124-242-00	ELECT	33uF	20%	25V
C551	1-124-234-00	ELECT	22uF	20%	16V
C553	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C554	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C570	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C571	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C574	1-125-705-11	DOUBLE LAYERS	0.22F		5.5V
C575	1-124-584-00	ELECT	100uF	20%	10V
C597	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C598	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C901	1-126-936-11	ELECT	3300uF	20%	16V
C903	1-136-173-00	FILM	0.47uF	5%	50V
C904	1-126-157-11	ELECT	10uF	20%	16V
C905	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C906	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C907	1-124-234-00	ELECT	22uF	20%	16V
C910	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C911	1-136-165-00	FILM	0.1uF	5%	50V
C912	1-136-165-00	FILM	0.1uF	5%	50V
C913	1-136-165-00	FILM	0.1uF	5%	50V
C914	1-136-165-00	FILM	0.1uF	5%	50V
C921	1-136-165-00	FILM	0.1uF	5%	50V
C922	1-136-165-00	FILM	0.1uF	5%	50V
C923	1-136-165-00	FILM	0.1uF	5%	50V
C924	1-136-165-00	FILM	0.1uF	5%	50V
C941	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN250	1-766-260-11	CONNECTOR, FFC/FPC (ZIF) 7P	
* CN401	1-506-995-11	PIN, CONNECTOR (PC BOARD) 13P	
CN571	1-764-422-11	PLUG, CONNECTOR 12P	
CNP900	1-774-701-11	PIN, CONNECTOR 16P	
		< JACK >	
CNJ951	1-764-424-41	JACK, PIN 2P (LINE OUT)	
		< DISCHARGE GAP >	
CP1	1-519-504-11	GAP, DISCHARGE	
		< DIODE >	
D1	8-719-040-04	DIODE MA721WK-(TX)	
D2	8-719-010-34	DIODE UZ-4.7BCS	
D50	8-719-921-74	DIODE MTZN-10A	
D301	8-719-991-33	DIODE 1SS133T-77	
D310	8-719-109-72	DIODE RD3.9ES-B2	
D311	8-719-991-33	DIODE 1SS133T-77	
D403	8-719-921-75	DIODE MTZN-10B	
D405	8-719-991-33	DIODE 1SS133T-77	
D501	8-719-991-33	DIODE 1SS133T-77	
D550	8-719-109-93	DIODE RD6.2ESB2	
D555	8-719-991-33	DIODE 1SS133T-77	
D556	8-719-110-13	DIODE RD9.1ESB2	
D570	8-719-109-93	DIODE RD6.2ESB2	
D571	8-719-109-93	DIODE RD6.2ESB2	
D572	8-719-109-93	DIODE RD6.2ESB2	
D573	8-719-109-93	DIODE RD6.2ESB2	
D574	8-719-109-93	DIODE RD6.2ESB2	
D575	8-719-109-93	DIODE RD6.2ESB2	
D576	8-719-109-93	DIODE RD6.2ESB2	
D577	8-719-109-93	DIODE RD6.2ESB2	
D578	8-719-921-80	DIODE MTZJ-11B	
D590	8-719-109-89	DIODE RD5.6ESB2	
D653	8-719-110-03	DIODE RD7.5ESB2	
D654	8-719-991-33	DIODE 1SS133T-77	
D660	8-719-110-60	DIODE RD24ES-B	
D901	8-719-049-38	DIODE 1N5404TU	
D902	8-719-109-93	DIODE RD6.2ESB2	
D903	8-719-991-33	DIODE 1SS133T-77	
D910	8-719-970-02	DIODE 1SR139-400	
		< FUSE >	
F901	1-532-982-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC250	8-759-161-01	IC HA12164	
IC301	8-759-330-62	IC LC75383ED	
IC303	8-759-369-41	IC HA13155	
IC401	8-759-040-83	IC BA6287F	
IC501	8-759-342-85	IC LC72358-8936	
		< JACK >	
J1	1-764-808-14	JACK (ANTENNA)	
J501	1-764-270-21	JACK, STEREO MINIATURE (DIA. 3.5)	(REMOTE IN)
		< JUMPER RESISTOR >	
JC100	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC101	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC102	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC103	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC104	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC106	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC107	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC108	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC110	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC111	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC117	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC118	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC119	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC120	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC121	1-216-295-00	CONDUCTOR, CHIP (2012)	
JC200	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC201	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC202	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC203	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC204	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC205	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC206	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC207	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC208	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC209	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC210	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC211	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC212	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC213	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC214	1-216-296-00	CONDUCTOR, CHIP (3216)	
		< COIL >	
L101	1-411-823-11	COIL, CHOKE	
L401	1-410-509-11	MICRO INDUCTOR 10uH	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q50	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q53	8-729-901-05	TRANSISTOR DTA124EK	
Q54	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q120	8-729-920-21	TRANSISTOR DTC314TKH04	
Q130	8-729-920-21	TRANSISTOR DTC314TKH04	
Q220	8-729-920-21	TRANSISTOR DTC314TKH04	
Q230	8-729-920-21	TRANSISTOR DTC314TKH04	
Q300	8-729-106-60	TRANSISTOR 2SB1115A	
Q301	8-729-901-00	TRANSISTOR DTC124EK	
Q310	8-729-901-05	TRANSISTOR DTA124EK	
Q311	8-729-901-00	TRANSISTOR DTC124EK	
Q320	8-729-900-53	TRANSISTOR DTC114EK	
Q321	8-729-111-52	TRANSISTOR 2SB984-K	
Q322	8-729-111-52	TRANSISTOR 2SB984-K	
Q401	8-729-015-11	TRANSISTOR 2SD1802FAST-TL	
Q402	8-729-901-05	TRANSISTOR DTA124EK	
Q403	8-729-106-60	TRANSISTOR 2SB1115A	
Q404	8-729-901-00	TRANSISTOR DTC124EK	
Q406	8-729-901-00	TRANSISTOR DTC124EK	
Q501	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q502	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q503	8-729-900-53	TRANSISTOR DTC114EK	
Q504	8-729-205-95	TRANSISTOR 2SA1428-Y	
Q550	8-729-209-15	TRANSISTOR 2SD2012	
Q571	8-729-901-00	TRANSISTOR DTC124EK	
Q572	8-729-030-18	TRANSISTOR 2SD2525	
Q573	8-729-901-05	TRANSISTOR DTA124EK	
Q590	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q651	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< RESISTOR >	
R1	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R2	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R3	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R4	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R6	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R7	1-216-246-00	METAL GLAZE 100K 5% 1/8W	
R11	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R12	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R21	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R22	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R31	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R32	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R50	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R51	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R53	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R55	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	

MAIN

Ref. No.	Part No.	Description			Remark
R59	1-247-421-11	CARBON	2.2K	5%	1/4W
R60	1-216-025-00	METAL GLAZE	100	5%	1/10W
R101	1-216-109-00	METAL CHIP	330K	5%	1/10W
R102	1-216-109-00	METAL CHIP	330K	5%	1/10W
R103	1-216-079-00	METAL CHIP	18K	5%	1/10W
R104	1-216-076-00	METAL CHIP	13K	5%	1/10W
R105	1-216-109-00	METAL CHIP	330K	5%	1/10W
R108	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R109	1-216-085-00	METAL CHIP	33K	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W
R112	1-216-073-00	METAL CHIP	10K	5%	1/10W
R120	1-216-073-00	METAL CHIP	10K	5%	1/10W
R121	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R122	1-216-073-00	METAL CHIP	10K	5%	1/10W
R123	1-216-093-00	METAL CHIP	68K	5%	1/10W
R124	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R130	1-216-073-00	METAL CHIP	10K	5%	1/10W
R131	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R132	1-216-073-00	METAL CHIP	10K	5%	1/10W
R133	1-216-093-00	METAL CHIP	68K	5%	1/10W
R134	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R201	1-216-109-00	METAL CHIP	330K	5%	1/10W
R202	1-216-109-00	METAL CHIP	330K	5%	1/10W
R203	1-216-079-00	METAL CHIP	18K	5%	1/10W
R204	1-216-076-00	METAL CHIP	13K	5%	1/10W
R205	1-216-109-00	METAL CHIP	330K	5%	1/10W
R208	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R209	1-216-085-00	METAL CHIP	33K	5%	1/10W
R220	1-216-073-00	METAL CHIP	10K	5%	1/10W
R221	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R222	1-216-073-00	METAL CHIP	10K	5%	1/10W
R223	1-216-093-00	METAL CHIP	68K	5%	1/10W
R224	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R230	1-216-073-00	METAL CHIP	10K	5%	1/10W
R231	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R232	1-216-073-00	METAL CHIP	10K	5%	1/10W
R233	1-216-093-00	METAL CHIP	68K	5%	1/10W
R234	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R251	1-216-113-00	METAL CHIP	470K	5%	1/10W
R252	1-216-109-00	METAL CHIP	330K	5%	1/10W
R253	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R254	1-216-085-00	METAL CHIP	33K	5%	1/10W
R255	1-216-079-00	METAL CHIP	18K	5%	1/10W
R256	1-216-079-00	METAL CHIP	18K	5%	1/10W
R257	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R258	1-216-073-00	METAL CHIP	10K	5%	1/10W
R259	1-216-073-00	METAL CHIP	10K	5%	1/10W
R260	1-249-429-11	CARBON	10K	5%	1/4W
R300	1-216-081-00	METAL CHIP	22K	5%	1/10W
R301	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R310	1-216-017-00	METAL GLAZE	47	5%	1/10W
R320	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R321	1-216-081-00	METAL CHIP	22K	5%	1/10W
R323	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R401	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R402	1-249-389-11	CARBON	4.7	5%	1/4W
R403	1-249-389-11	CARBON	4.7	5%	1/4W
R404	1-216-073-00	METAL CHIP	10K	5%	1/10W
R405	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R450	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R496	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R501	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R502	1-216-081-00	METAL CHIP	22K	5%	1/10W
R503	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R504	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R506	1-249-421-11	CARBON	2.2K	5%	1/4W
R507	1-249-421-11	CARBON	2.2K	5%	1/4W
R508	1-249-421-11	CARBON	2.2K	5%	1/4W
R509	1-216-073-00	METAL CHIP	10K	5%	1/10W
R510	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R511	1-216-073-00	METAL CHIP	10K	5%	1/10W
R512	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R513	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R514	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R515	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R516	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R517	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R518	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R519	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R520	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R522	1-249-421-11	CARBON	2.2K	5%	1/4W
R523	1-249-421-11	CARBON	2.2K	5%	1/4W
R524	1-249-421-11	CARBON	2.2K	5%	1/4W
R525	1-249-421-11	CARBON	2.2K	5%	1/4W
R526	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R527	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R528	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R530	1-216-073-00	METAL CHIP	10K	5%	1/10W
R532	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R534	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R535	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R536	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R550	1-216-041-00	METAL CHIP	470	5%	1/10W
R570	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R575	1-247-807-11	CARBON	100	5%	1/4W
R576	1-247-807-11	CARBON	100	5%	1/4W
R577	1-247-807-11	CARBON	100	5%	1/4W
R583	1-216-186-00	METAL GLAZE	330	5%	1/8W

Ref. No.	Part No.	Description			Remark
R587	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R588	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R589	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R590	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R595	1-216-005-00	METAL CHIP	15	5%	1/10W
R596	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R651	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R652	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R654	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R655	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R660	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R661	1-216-093-00	METAL CHIP	68K	5%	1/10W
R662	1-216-678-11	METAL CHIP	13K	0.5%	1/10W
R901	1-249-429-11	CARBON	10K	5%	1/4W
R902	1-249-429-11	CARBON	10K	5%	1/4W
R911	1-249-385-11	CARBON	2.2	5%	1/4W
R912	1-249-385-11	CARBON	2.2	5%	1/4W
R913	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R914	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R921	1-249-385-11	CARBON	2.2	5%	1/4W
R922	1-249-385-11	CARBON	2.2	5%	1/4W
R923	1-249-385-11	CARBON	2.2	5%	1/4W
R924	1-249-385-11	CARBON	2.2	5%	1/4W
R941	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
		< VARIABLE RESISTOR >			
RV101	1-225-212-21	RES, ADJ 1K			
RV201	1-225-212-21	RES, ADJ 1K			
		< SWITCH >			
S501	1-571-478-11	SWITCH, SLIDE (POWER SELECT)			
S550	1-762-638-11	SWITCH, TACTILE (RESET)			
		< TUNER >			
TU1	A-3282-022-A	TUNER UNIT (TUX-006(EE))			
		< THERMISTOR(POSITIVE) >			
THP100	1-809-148-11	THERMISTOR PTH8L07AR2ROM1B510			
		< VIBRATOR >			
X501	1-760-223-11	VIBRATOR, CRYSTAL (4.5MHz)			

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
11	1-776-207-31	CORD (WITH CONNECTOR)	
130	1-765-460-12	CORD (WITH CONNECTOR)	
F901	1-532-982-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	
HP901	1-500-196-21	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3368-684-1	MOTOR ASSY, MAIN (CAPSTAN/REEL)	
M902	X-3368-685-1	MOTOR ASSY, SUB (LOADING/TAPE OPERATION)	
S901	1-692-885-11	SWITCH, ROTARY SLIDE (TAPE OPERATION)	

****

ACCESSORIES & PACKING MATERIALS

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1-473-067-31 REMOTE COMMANDER (RM-X2S)
3-810-597-31 MANUAL, INSTRUCTION (ENGLISH, POLISH, BULGARIAN, HUNGARIAN, RUSSIAN)
3-810-598-21 MANUAL, INSTRUCTION, INSTALL (ENGLISH, POLISH, BULGARIAN, HUNGARIAN, RUSSIAN)
3-856-246-41 MANUAL, INSTRUCTION, INSTALL (ENGLISH, BULGARIAN, HUNGARIAN, RUSSIAN) (RM-X2S)
* X-3371-377-1 CASE ASSY

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HARDWARE LIST

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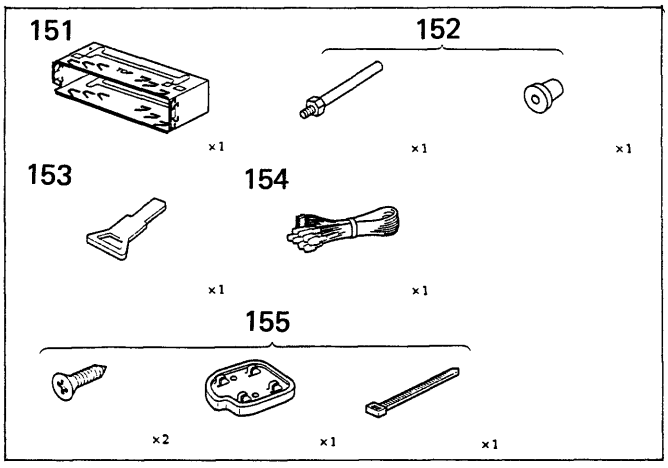
#1	7-621-770-67	SCREW +PTT 2.6X6 (S)
#2	7-621-770-XX	SCREW +PTT 2.6X8 (S)
#3	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT
#4	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3
#5	7-628-253-00	SCREW +PS 2X4
#6	7-624-104-04	STOP RING 2.0, TYPE -E
#7	7-621-772-10	SCREW +B 2X4
#8	7-621-773-95	SCREW +PTT 2.6X6 (S)

****

Ref. No.	Part No.	Description	Remark
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
151	3-931-986-01	FRAME, FITTING	
152	X-3366-405-1	SCREW ASSY (EXP), FITTING	
153	3-388-078-01	KEY	
154	1-776-207-31	CORD (WITH CONNECTOR)	
155	X-3369-817-1	BRACKET ASSY	



9-923-560-11

Sony Corporation
Personal & Mobile Communication Company

English
96E0475063-1
Printed in Germany
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Published by Quality Assurance Dept.